

OFFICIAL TRANSCRIPT OF PROCEEDINGS BEFORE THE POSTAL RATE COMMISSION

In the Matter of:)

POSTAL RATE AND FEE CHANGES)

Docket No.: R2006-1

VOLUME #36

RECEIVED
2006 DEC - 6 P 3:29
POSTAL RATE COMMISSION
OFFICE OF THE SECRETARY

Date: December 5, 2006

Place: Washington, D.C.

Pages: 12236 through 12531

HERITAGE REPORTING CORPORATION

Official Reporters

1220 L Street, N.W., Suite 600

Washington, D.C. 20005

(202) 628-4888

POSTAL RATE COMMISSION

In the Matter of:)
) Docket No.: R2006-1
POSTAL RATE AND FEE CHANGES)

Suite 200
Postal Rate Commission
901 New York Avenue, N.W.
Washington, D.C.

Volume 36
Tuesday, December 5, 2006

The above-entitled matter came on for hearing
pursuant to notice, at 9:37 a.m.

BEFORE:

HON. GEORGE A. OMAS, CHAIRMAN
HON. DAWN A. TISDALE, VICE-CHAIRMAN
HON. RUTH Y. GOLDWAY, COMMISSIONER
HON. TONY HAMMOND, COMMISSIONER
HON. MARK ACTON, COMMISSIONER

APPEARANCES:

On behalf of United States Postal Service:

FRANK R. HESELTON, Esquire
KENNETH N. HOLLIES, Esquire
ERIC P. KOETTING, Esquire
SHEELA PORTONOV, Esquire
SCOTT L. REITER, Esquire
United States Postal Service
475 L'Enfant Plaza, S.W.
Washington, D.C. 20260-1137
(202) 268-2992

Heritage Reporting Corporation
(202) 628-4888

APPEARANCES: (Cont'd.)

On behalf of the Office of the Consumer Advocate:

SHELLEY S. DREIFUSS, Esquire
EMMETT RAND COSTICH, Esquire
Postal Rate Commission
Office of the Consumer Advocate
901 New York Avenue, N.W., Suite 200
Washington, D.C. 20268
(202) 789-6859

On behalf of Direct Marketing Association, Inc.:

DANA T. ACKERLY, Esquire
Covington & Burling
1201 Pennsylvania Avenue, N.W.
Washington, D.C. 20004
(202) 662-5296

On behalf of Magazine Publishers of America:

DAVID M. LEVY, Esquire
Sidley Austin Brown & Wood, LLP
1501 K Street, N.W.
Washington, D.C. 20005-1401
(202) 736-8214

On behalf of National Newspaper Association:

TONDA RUSH, Esquire
King & Ballou
P.O. Box 50301
Arlington, Virginia 22205
(703) 812-8989

On behalf of United Parcel Service:

JOHN E. MCKEEVER, Esquire
DLA Piper Rudnick Gray Cary US, LLP
One Liberty Place
1650 Market Street, Suite 4900
Philadelphia, Pennsylvania 19103-7300
(215) 656-3310

APPEARANCES: (Cont'd.)

On behalf of Valpak Dealers Association, Inc. and Valpak
Direct Marketing Systems, Inc.:

WILLIAM J. OLSON, Esquire
William J. Olson, P.C.
8180 Greensboro Drive, Suite 1070
McLean, Virginia 22102-3860
(703) 356-5070

C O N T E N T S

WITNESSES APPEARING:

JOHN P. KELLEY
 CHRIS R. ORONZIO
 A. THOMAS BOZZO (USPS-RT-1)
 STUART W. ELLIOTT
 A. THOMAS BOZZO (USPS-RT-5)

<u>WITNESSES:</u>	<u>DIRECT</u>	<u>CROSS</u>	<u>REDIRECT</u>	<u>RECROSS</u>	<u>VOIR DIRE</u>
John Kelley	12242	--	--	--	--
Chris R. Oronzio	12267	--	12302	--	--
By Mr. Costich	--	12282	--	--	--
A. Thomas Bozzo	12305	--	--	--	--
By Ms. Rush	--	12336	--	--	--
Stuart W. Elliott	12350	--	--	--	--
By Mr. Costich	--	12368	--	--	--
By Mr. McKeever	--	12370	--	--	--
By Mr. Olson	--	12372	--	--	--
A. Thomas Bozzo	12383	--	12526	--	--
By Mr. Costich	--	12470	--	--	--
By Mr. McKeever	--	12481	--	--	--
By Mr. Olson	--	12500	--	12527	--

C O N T E N T S

<u>DOCUMENTS TRANSCRIBED INTO THE RECORD</u>	<u>PAGE</u>
Corrected rebuttal testimony of John Kelley on behalf of United States Postal Service, USPS-RT-6	12244
Corrected rebuttal testimony of Chris R. Oronzio on behalf of United States Postal Service, USPS-RT-15	12269
Corrected rebuttal testimony of A. Thomas Bozzo on behalf of United States Postal Service, USPS-RT-1	12308

C O N T E N T S

<u>DOCUMENTS TRANSCRIBED INTO THE RECORD</u>	<u>PAGE</u>
Corrected rebuttal testimony of Stuart W. Elliott on behalf of Magazine Publishers of America, MPA et al.-RT-2	12353
Corrected rebuttal testimony of A. Thomas Bozzo on behalf of United States Postal Service, USPS-RT-5	12385

E X H I B I T S

<u>EXHIBITS AND/OR TESTIMONY</u>	<u>IDENTIFIED</u>	<u>RECEIVED</u>
Corrected rebuttal testimony of John Kelley on behalf of United States Postal Service, USPS-RT-6	12242	12243
Corrected rebuttal testimony of Chris R. Oronzio on behalf of United States Postal Service, USPS-RT-15	12267	12268
Corrected rebuttal testimony of A. Thomas Bozzo on behalf of United States Postal Service, USPS-RT-1	12305	12307
Corrected rebuttal testimony of Stuart W. Elliott on behalf of Magazine Publishers of America, MPA et al.-RT-2	12350	12352
Corrected rebuttal testimony of A. Thomas Bozzo on behalf of United States Postal Service, USPS-RT-5	12383	12384

P R O C E E D I N G S

(9:37 a.m.)

CHAIRMAN OMAS: First of all, let me begin by saying good morning to everyone.

It's a little confusing. Ms. Rush, Tonda Rush, who was to cross-examine Dr. Bozzo, has been held up in traffic, so we will proceed until she does arrive if that's okay with everyone else. It was okay with the Postal Service.

Good morning. We again are here today to continue hearings to receive testimony in rebuttal to participants' direct testimony in Docket R2006-1.

Today we will receive testimony from four witnesses: Mr. Bozzo, two pieces, Kelley, Oronzio and Elliott.

Does anyone have any procedural matter they'd like to discuss before we begin today?

(No response.)

CHAIRMAN OMAS: There being none, Ms. Portonovo, would you begin, please?

As we all know, there's been no request for oral cross-examination of Mr. Kelley.

MS. PORTONOVO: Thank you, Mr. Chairman. The Postal Service calls John P. Kelley to the stand.

//

1 Whereupon,

2 JOHN P. KELLEY

3 having been previously duly sworn, was
4 recalled as a witness herein and was examined and
5 testified further as follows:

6 (The document referred to was
7 marked for identification as
8 Exhibit No. USPS-RT-6.)

9 DIRECT EXAMINATION

10 BY MS. PORTONOVO:

11 Q Mr. Kelley, in front of you you have two
12 copies of a document entitled Rebuttal Testimony of
13 John P. Kelley on Behalf of the United States Postal
14 Service.

15 Were the contents of these documents
16 prepared by you or under your direction?

17 A Yes.

18 Q And if they were given orally today would
19 they be the same?

20 A Yes.

21 MS. PORTONOVO: With that, the Postal
22 Service requests that these documents be moved into
23 evidence.

24 CHAIRMAN OMAS: Is there any objection?

25 (No response.)

Heritage Reporting Corporation
(202) 628-4888

1 CHAIRMAN OMAS: Hearing none, Ms. Portonovo,
2 would you please provide the reporter with two copies
3 of the corrected testimony of John Kelley?

4 That testimony is received into evidence and
5 will be transcribed into the record.

6 (The document referred to,
7 previously identified as
8 Exhibit No. USPS-RT-6, was
9 received in evidence.)

10 //

11 //

12 //

13 //

14 //

15 //

16 //

17 //

18 //

19 //

20 //

21 //

22 //

23 //

24 //

25 //

Postal Rate Commission
Submitted 11/20/2006 3:50 pm
Filing ID: 55056
Accepted 11/20/2006

**BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON DC, 20268-0001**

USPS-RT-6

POSTAL RATE AND FEE CHANGES, 2006

Docket No. R2006-1

**REBUTTAL TESTIMONY
OF
JOHN P. KELLEY
ON BEHALF OF THE
UNITED STATES POSTAL SERVICE**

TABLE OF CONTENTS

1		
2	Autobiographical Sketch	ii
3	I. Purpose and Scope of Testimony	1
4	II. Sampling and Data Concerns of Dr. J. Edward Smith about	
5	2005 Transaction Study	2
6	III. Comparison of 2005 Transaction Study with 1996 Transaction	
7	Study	16
8	IV. 2005 Transaction Study Used A Sound Sample Design	
9	Which Resulted In A Reliable Database	18

AUTOBIOGRAPHICAL SKETCH

1

2

3

4

5

6

7

8

9

My name is John P. Kelley. I am an economist in the Finance department at Postal Service Headquarters. I testified on costing issues regarding delivery and transportation in the instant and previous dockets. I have been employed by the Postal Service since 1997. Prior to joining the Postal Service, I was employed as a statistician at the American Petroleum Institute as well as at the Bureau of Labor Statistics. I received a B.S. in mathematics education from University of New Hampshire in 1986 and a M.A. in mathematics from Indiana University in 1990.

1 **I. PURPOSE AND SCOPE OF TESTIMONY**

2 The purpose of my testimony is to respond to the sample design and data
3 concerns regarding the 2005 Transaction Time Study Dr. J. Edward Smith on
4 pages five through sixteen of his testimony (OCA-T-2). In so doing, I will provide
5 a thorough comparison of the sample design, data collection methods, and data
6 quality issues between the 2005 Transaction Time Study and its predecessor,
7 the 1996 Transaction Time Study sponsored by witness Brehm (USPS-T-21) in
8 Docket No. R97-1.

1 **II. SAMPLING AND DATA CONCERNS OF DR. J. EDWARD SMITH**
2 **ABOUT 2005 TRANSACTION STUDY**
3

4 In this section, I will address the sampling and data issues raised about
5 the 2005 Transaction Time Study in the testimony of witness Smith (OCA-T-2).
6 Dr. Smith raises four issues, and I will address each of them in turn.

7 *Issue 1: There is No Evidence that Sampling Theory was Adequately*
8 *Employed in Determining the Sampling Plan¹.*

9 In support of his criticism that Postal Service witness Nieto (USPS-T-24)
10 did not employ sampling theory, Dr. Smith states.

11 *In reviewing a data collection effort based on the sampling*
12 *transactions at sites, one would expect to find an analysis of*
13 *the population of sites, types of transactions and data to*
14 *be collected, justification for the selection of the sites,*
15 *computation of sample sizes in terms of their statistical*
16 *properties, and quality control procedures².*

17 I will list and enumerate the five points Dr. Smith raises so that they will be
18 easier to address. Dr. Smith was seeking
19

- 20 1) analysis of the population of sites
21 2) analysis of the types of transactions and data
22 to be collected
23 3) proper justification for the selection of sites
24 4) computation of sample sizes in terms of their statistical
25 properties
26 5) documentation of quality control procedures
27

28 Contrary to Dr. Smith's contention, witness Nieto actually addressed all of these
29 issues in her direct testimony.

¹ OCA-T-2 page 5.

² OCA-T-2 page 5.

1 First, it is easily seen that an analysis of population sites (sample frame)
2 was done. As witness Nieto clearly states on page four of her testimony:

3 These post offices were selected from a sample frame of 15,096
4 post offices with the POS-ONE system. Although POS-ONE is not
5 available at every office, the POS-ONE offices represent
6 approximately 90 percent of all retail revenue and offer a sufficiently
7 diverse population of offices (including one-window offices) to
8 capture the required variation across the sampled offices³.
9

10 An analysis of the frame to determine its coverage of the universe (all post
11 offices), as described by witness Nieto, demonstrates that sampling theory was
12 used. In addition, the POS-ONE system records information across all types of
13 transactions, ensuring sufficient diversity in transaction types would be included
14 in the sample.

15 Second, witness Nieto plainly lists the types of transactions and data to be
16 collected for the 2005 study. On page four, witness Nieto states the objective of
17 the study:

18 The study objective was to measure the time associated with
19 individual transactions at the windows at post offices⁴.
20

21 Later, on page six of her testimony, witness Nieto reveals exactly what
22 information was collected as part of the study. It can be summarized by the
23 following list of bullet points:

- 24 ▪ the time associated with the customer approaching the
25 window (if applicable)
26 ▪ the time the transaction began
27 ▪ the time the transaction ended⁵
28

29 Third, Dr. Smith wants more justification for the selection of sites included
30 in the study, but he is not specific as to what type of additional justification he is

³ USPS-T-24 page 4.

⁴ USPS-T-24 page 4.

⁵ USPS-T-24 page 6.

1 seeking. As witness Nieto states in her testimony and accompanying library
2 reference, a stratified random sample design was used for the 2005 Transaction
3 Time Study. The stratification variables were revenue and geography. The
4 twenty-seven specific sites were selected with the aid of random numbers, as is
5 shown in USPS-LR-L-78. A probability sample, as this study utilized, is justified
6 by its design, not by the units that are ultimately selected with the aid of random
7 numbers. Thus, Dr. Smith's claim that more justification for the specific sites
8 selected is wrong because witness Nieto has already implicitly validated the post-
9 offices selected by 1) thoroughly analyzing the frame, 2) stratifying the frame
10 using two important variables – revenue and geography, and 3) selecting a
11 sample of twenty-seven post offices with the use of random numbers

12 Fourth, Dr. Smith apparently wanted to see a comparison of different
13 possible sample sizes along with their statistical properties. I do not think such a
14 table is applicable. Many sample surveys are designed to derive point estimates
15 for a vector of variables of interest. Usually that point estimate is the mean, and
16 a measure of reliability can be derived on that point estimate with the use of
17 standard variance formulas that are found in numerous sampling textbooks (i.e.
18 Sampling Techniques by William Cochran). In this type of sample survey,
19 assuming that the sample design is not altered, the larger the sample, the more
20 reliable the point estimates. However, since the purpose of this study was to
21 provide the data needed to update the econometric model and not estimate
22 national level point estimates, constructing such a table would not have been
23 useful. As stated by witness Nieto during oral cross-examination.

1 The goal of the study was not [to] produce an estimate of
2 total annual transaction by type but rather to produce a dataset
3 that permitted an update of the established transaction time
4 econometric model⁶.

5
6 Therefore, such a table comparing different sample sizes and their levels
7 of precision is not an essential component for this design. The sample size for
8 the 2005 study (27 sites) was largely based on the size of the previous 1996
9 Transaction Study (20 sites), which provided sufficient data for the estimation of
10 an econometric equation for transaction time, the results of which were accepted
11 by the Commission in Docket R97-1⁷. As Deming confirms below, the size of the
12 sample is, in and of itself, an overrated factor in judging its quality.

13 The size of a sample is no criterion of its precision, nor of its accuracy,
14 nor of its usefulness. The procedure of stratification, the choice of the
15 sampling unit, the formulas prescribed for the estimations, are more
16 important than size in the determination of precision. Once these
17 features are fixed, then as we increase the size of a sample drawn
18 with random numbers, we gain precision (though the point of
19 diminishing returns comes rapidly).⁸

20
21 Last, Dr. Smith is displeased with the analysis of the quality control
22 procedures used in the 2005 study. However, on page two and in USPS-LR-L-
23 79, witness Nieto clearly states that the current study utilizes the POS-ONE
24 database to match information collected as part of the study with the actual
25 transactions in the POS-ONE database. This matching process was crucial to
26 validate the information recorded by the data collectors as part of the study. The
27 transactions recorded were closely scrutinized before being included in the final

⁶ Tr. 5/706 (OCA/USPS-T-24-5)

⁷ The 1996 Transaction Study was not specifically mentioned in Docket R97-1 Opinion and Recommended Decision. However the estimated variabilities were incorporated into the Postal Rate Commission CRA spreadsheets.

⁸ W Edwards Deming, Sample Design in Business Research, John Wiley & Sons, 1990, p 28.

1 database. Each transaction recorded by data collectors was individually
2 reviewed and verified against the POS-ONE database which contains a census
3 of transactions each day. Transactions that were unable to be matched with the
4 census of transactions were not included in the final database. As a result, the
5 final database included a large set of diverse and accurately recorded
6 transactions that were used to estimate an econometric model.

7 Dr. Smith summarizes his concerns about the sampling theory with this
8 statement on page six of his testimony.

9 However, a database that is not based on statistical sampling
10 theory and cannot be verified to be representative of the set of
11 transactions studied does not provide a foundation for the
12 development of a transaction-time econometric model. In fact, a
13 model developed on the basis of incomplete and irrelevant data
14 could give incorrect conclusions⁹.

15
16 This statement however implies several unsubstantiated claims. Dr.
17 Smith's original premise was that *there was no evidence that sampling theory*
18 *was adequately employed*. Now it seems as though he has concluded that
19 sampling theory was not used, and that the data collected as part of the 2005
20 Transaction Study is not representative and contains incomplete and irrelevant
21 data.

22 In fact, by his own testimony, he implied that "witness Nieto has
23 essentially used a stratified sample."¹⁰ As applied by witness Nieto, the 2005
24 Transaction Time Study is based on statistical sampling theory.

⁹ OCA-T-2 page 6.

¹⁰ OCT-T-2 page 5.

1 Secondly, his claim that the sample "cannot be verified to be
2 representative" is a common misconception about probability sampling.

3
4 Probability sampling is NOT the substantive expert's
5 selection of "representative" or of "typical" cases, areas,
6 or farms, or of weeks or months from the year. Instead
7 the selection of the sampling units is accomplished by
8 means of a standard tool known as a table of random
9 numbers. When the selections are made by judgment,
10 inferences may be made only by judgment, not by the
11 theory of probability¹¹.

12
13 As Deming recommends in the preceding paragraph, random numbers
14 were utilized to select the twenty-seven sites that participated in the 2005
15 Transaction Time Study.

16 Last, Dr. Smith is concerned that if an econometric model is based on
17 incomplete or irrelevant data, the model could produce incorrect results. This
18 seems as though it is a reasonable assertion, except that the 2005 Transaction
19 Study is not based on incomplete or irrelevant data, and Dr. Smith produces no
20 evidence that it does. As stated earlier, in terms of completeness, the frame
21 encompassed approximately ninety percent of the retail revenue from post
22 offices. The data collected for each transaction was the following: 1) time
23 associated with customer approaching the window, 2) the time the transaction
24 began, and 3) the time the transaction ended. Each of these types of data was
25 potentially relevant in designing the study for the purpose of updating the
26 econometric model. Therefore, the study was design to collect complete and
27 relevant data.

¹¹ W Edwards Deming, Sample Design in Business Research, John Wiley & Sons, 1990, p 28.

1 *Issue Two: The 7915 Transactions Observed have not been Shown to be*
 2 *Representative of the General Population of Transactions*¹².

3 Dr. Smith largely justifies this position with the use of Table 1 from his
 4 testimony, which is reproduced below:

5 **Table 1¹³: Site Summary**

	Small POS-ONE Sites	Large POS-ONE Sites	Total POS-ONE Sites
Number	7,542	7,544	15,086
Percent of Total	49.99	50.01	
Revenue per Site	245,670	1,348,940	797,013
Total Sales	1,852,843,140	10,176,403,360	12,023,738,118
Percent of Total	15.41	84.64	
Number of Sites Sampled	9	18	27
Percent of Sampled Sites	33.33	66.67	
Total Observations	1841	6074	7915
Percent of Sample	23.26	76.74	

6
 7 The following two bullet points using data from Table 1 contain his
 8 justification for how the 2005 database has not been shown to be representative
 9 of the general population of transactions.

- 10 ▪ The database consists of 7915 transactions, which
- 11 have not been shown to be representative of the total number
- 12 of transactions. Assuming that revenue at a site is proportional
- 13 to the number of transactions at the site, Table 1 below (above)
- 14 shows that based on revenue approximately 85 percent of the
- 15 7915 transactions should have been obtained from large sites,
- 16 with 15 percent from small sites. In fact approximately 77
- 17 percent of the transactions came from large sites, with
- 18 approximately 23 percent from small sites. There is no
- 19 explanation for this discrepancy¹⁴.

¹² OCA-T-2 page 6.

¹³ OCA-T-2 page 7.

¹⁴ OCA-T-2 page 6

1 ▪ Also, the database has not been shown to be representative
2 of total transactions in terms of the number of POS-ONE sites
3 sampled. Approximately 50 percent of the POS-ONE sites are
4 small, but only 33 percent of the sites in the sample are small,
5 with 67 percent being large. Again no adequate basis for this
6 anomaly is offered by witness Nieto¹⁵.
7

8 Dr. Smith is using a circular argument. First, Dr. Smith claims that there
9 are not enough transactions from the large sites, citing the 77 percent that were
10 obtained rather than the 85 percent that "should have been obtained". But his
11 next bullet point contradicts that by saying that there should be more small sites
12 in the sample, because small sites encompass approximately fifty percent of the
13 post offices and small sites only comprise thirty-three percent of the sample (nine
14 of twenty-seven post-offices). However, using his assumption that revenue at a
15 site is proportional to the number of transactions, the only reasonable method, in
16 a probability sample, to increase the number of transactions from large sites, is to
17 select more large sites. This would result, of course, in lowering the percentage
18 of small sites that are included in the sample.

19 There is no explanation of this discrepancy or anomaly by witness Nieto
20 because no inconsistency exists. The 2005 Transaction Study utilizes a stratified
21 random sampling design which obviates deriving a "representative" sample under
22 witness Smith's definition.
23
24
25

¹⁵ OCA-T-2 page 6.

1 *Issue 3: The Development of the Database Appears to Have Lacked*
2 *Adequate Quality Control*¹⁶.

3
4 Dr. Smith is displeased about the amount of transaction data that was not
5 used in the econometric modeling. As he summarizes on page ten of his
6 testimony, approximately sixteen percent of all recorded transactions were not
7 used, and thirty percent of nested transactions were dropped from the final
8 dataset.

9 I believe that Dr. Smith is too focused on the data that was *not* used in the
10 final dataset. The spotlight, rather, should be on the quality and size of the data
11 that was used to construct the final database. This study afforded its sponsors
12 an unusual opportunity to validate the data that was collected by matching the
13 transaction data to the POS-ONE database. Normally, coordinators of a survey
14 do not have a database available to them which allows for collected data to be
15 accurately confirmed. Most surveys, after training and possibly a pilot, dispatch
16 the data collectors to the field to implement the methods covered in the training
17 and accurately collect the data. At the conclusion of the data collection phase,
18 the initial database is verified and cleaned with the use of several queries that
19 attempt to validate the data collected. An example of such a procedure can be
20 found in the previous study whereas witness Brehm instituted a data quality
21 check that required transactions that involved revenue to have revenue recorded
22 as part of the data collection. In situations where an inconsistency existed

¹⁶ OCA-T-2 page 9

1 between the recorded transaction and the revenue, i.e. no revenue when there
2 should have been, the transaction was dropped from the final dataset¹⁷.

3 In the 2005 transaction study, however, the collected data was matched to
4 the POS-ONE transactional data from the days and sites observed. The
5 matching process resulted in 1,535 observations (16 percent) not being included
6 in the final database because they could not be matched¹⁸. Dr. Smith is
7 concerned about the quantity of observations dropped and the possible resulting
8 bias from these observations being excluded from the final database.

9 I do not share the same uneasiness as Dr. Smith about the accuracy of
10 the remaining observations. If observations were eliminated through *ad hoc* edit
11 checks, as is often done on collected data, then one might have valid concerns
12 about the training, data collection tools, etc. Such edit checks are far from
13 perfect, and they usually can only identify obvious data collection errors. In
14 developing the database from the 2005 Transaction Study, however, each
15 transaction recorded by the data collectors was matched to the POS-ONE
16 database, which contained a census of transactions. Therefore, the 7,915
17 transactions that were included in the final database were validated against a
18 census of transactions. As a result, they can be viewed as an extremely
19 accurate dataset, especially as compared to the development of similar
20 databases that only use *ad hoc* techniques to identify data collection errors. The
21 previous study, which only had the ability to perform *ad hoc* data checks,

¹⁷ Docket No. R97-1 USPS-LR-H-167 page 73.

¹⁸ Note that this does not imply that the unused observations contained errors. Rather it implies that for a specific day for a specific post office a match could not be made to the POS-ONE system.

1 collected 12,193 transactions but, after several edit checks, 5,018 transactions
 2 were removed, resulting in 7,175 transactions in the final data set. In summary,
 3 the current study has a superior dataset to the previous one for two reasons.
 4 One, the reliability of the final data was better due to the ability to match recorded
 5 data with transaction data from POS-ONE and, two, fewer observations had to
 6 be dropped from the database through the data cleaning process.

7

8 *Issue 4: There Was No Analysis of Whether Enough Data Was Gathered*
 9 *for Each Type of Transaction in Order to Have a Statistically Adequate*
 10 *Sample*

11

12 After raising the issue, Dr. Smith attempts to provide an analysis of
 13 whether enough transactions by type were collected in the 2005 study. In doing
 14 his analysis, he first uses a standard statistical formula for computing the sample

15 size $n = \frac{z^2}{H^2} s^2$ where z refers to a location (95th percentile) from the standard

16 normal curve, s^2 is an estimate of the variance, and H is based on the desired
 17 level of precision, for which Dr. Smith has chosen five percent. After computing
 18 the mean of ninety-three seconds over all single item transactions included in the
 19 final dataset, he computes H to be five percent of ninety three seconds which is
 20 equal to 4.5 seconds. He applies the sample size formula to derive Table 4
 21 which is reproduced below and which compares the actual sample size with the
 22 computed sample size based on $H = 4.5$.

23

24

25

26

1

2 Table 4¹⁹

Variable and Product Category	More than one item may be in be in a transaction			Cases with one item in a transaction			Total Time for One Item Transactions Co(E)*Co(F)	Required Sample Size Based on H = 4.5	Actual Sample Size
	Transactions	Time Seconds	Std.Dev.	Transactions	Time Seconds	Std.Dev.			
CERT (Certified Mail)	391	163.8	127.2				0	na	391
FC (First Class)	1777	129.6	115.2	674	74.8	52.6	50415	525	1777
STMPSCN (Stamps Scanned)	2019	97.5	94.7	1223	61.8	46.1	75581	403	2019
STMPNO (Stamps Not Scanned)	1266	108.6	102.3	627	64.1	58.1	40191	640	1266
PM (Priority Mail)	1550	155.5	135.6	602	105	75.3	63210	1076	1550
MO (Money Order)	851	139.3	150	455	118.4	111.9	53872	2375	851
PP (Parcel Post)	291	176.3	156.2	85	101.3	57.2	8611	621	291
OWR	159	188.6	167.9	57	112.6	94.6	6418	1698	159
Bounded Printed Matter	13	203.5	204.1	5	82	64	410	777	1
Library Mail	1	86	na	na	na	na	0	na	323
Media Mail	148	192.5	170.4	52	115.6	97	6011	1795	148
EM (Express Mail)	322	182.2	136.5	235	155.2	78.9	36472	1181	322
PVI (PVI Strips)	101	165.5	157	43	100.6	112.5	4326	2401	101
INS (Insurance)	314	209.9	158.1	na	na	na	0	na	314
RP (Ready Post Items)	334	140.4	114.7	57	88.9	74.6	5067	1056	334
INTERNATL	332	243.7	207	152	188.8	151.6	28698	4360	332
STMPEN (Stamped Envelopes)	163	87.8	73	77	53.8	52.6	4143	525	163
REGINS (Registered with Insurance)	15	370.4	387.5	na	na	na	0	na	15
PASS (Passport)	35	803	428	13	807	510	10491	49343	35
RETAIL	8	312.9	147.7	3	337.3	101.8	1012	1966	8
BOX (PO Box Items)	82	213.8	198	68	191.6	195.6	13029	7258	82
DOMCOD (Domestic COD)	1	823	na	na	na	na	0	na	1
FCENCL (First Class with Enclosure)	1	161	na	na	na	na	0	na	1
OSS (Other Special Services)	839	184.7	153.5	na	na	na	0	na	839
Return Receipt	319	175.9	142	na	na	na	0	na	319
Delivery Confirmation	480	200.9	191.9	na	na	na	0	na	480
Signature Confirmation	18	348.6	542.8	na	na	na	0	na	18
Certificate of Mailing	22	102.8	98.8	na	na	na	0	na	22
Postage Due	9	123.4	48.2	8	129.5	47.8	1036	433	9
SERVICES	490	110.5	95.3			82		1276	490
Hold Mail	78	97.5	83.2	74	95.5	62.4	7067	739	78
Pickup	402	111.4	98.2	345	102	83	35190	1307	402
Mailing Payments	12	158.4	146	8	161.8	157.2	1294	4688	13

Total Transactions:

4863

Total Time:

452544

Time per Transaction: 93.058524

3

4 Since the table indicates the "required" sample size to be much higher
5 than the actual sample size for several transaction types (i.e. money orders), Dr.
6 Smith concludes that not enough transactions were collected for many types
7 during the study.

8 I disagree on both theoretical and practical grounds with Dr. Smith's
9 derivation of Table 4 and his conclusions.

10 Theoretically, in deriving the required sample sizes provided in Table 4,
11 witness Smith incorrectly uses H= 4.5 seconds, which is five percent of the mean

¹⁹ OCA-T-2 page 5

1 transaction time over all single item transactions of 93 seconds. The proper use
 2 of this formula is to calculate a different H for each transaction type. If it is
 3 desired to have the same level of precision for all transactions, then H is derived
 4 by taking five percent, for example, multiplied by the mean transaction time for
 5 that transaction type.

6 I will demonstrate the proper use of the formula through a specific
 7 example from Table 4. The mean transaction time for Passport transactions is
 8 estimated to be 807 seconds with a standard deviation of 510 seconds. Applying
 9 the sample size formula properly, using five percent as the precision level and
 10 ninety-five percent confidence, produces a "required" sample size of

$$11 \quad n = \frac{(1.96)^2 (510)^2}{(807 \times .05)^2} = 614, \text{ rather than the 49,343 as reported in the table. This}$$

12 shows that Dr. Smith is off by several orders of magnitude in his sample
 13 "analysis." In addition to applying this formula incorrectly, Dr. Smith, by
 14 constructing Table 4, assumes that the means and standard deviations by
 15 transaction type are known *before* the survey is conducted. In practice, usually
 16 crude estimates are used when applying the sample size formula.

17 Now, on a practical level everyone wants larger sample sizes. However,
 18 data collection is costly, so limits need to be set. Therefore, constructing Table 4
 19 might be a nice academic exercise, but as a practical matter it is not useful. The
 20 transaction types need to be condensed and prioritized into a short list, maybe
 21 five. Then a sample size can be computed for each transaction type and, ideally,
 22 (especially if the objective is national level estimates, which is not the case with
 23 this study) the largest sample size computed is chosen for the study. If that

1 sample size is within your budget, then the sample size has been decided. If not,
2 one has to decide on another course of action, usually resulting in accepting a
3 higher acceptable margin of error.

4 By including all transaction types in Table 4, one is led to preposterous
5 conclusions. For example, how does one design a sample of post-offices, in
6 which the transactions to be observed are not known in advance, to
7 simultaneously provide 777 Bound Printed Matter transactions and 49,343
8 Passport transactions. A process which suggests that a transaction study needs
9 777 Bound Printed Matter or 49,343 Passport transactions, as Table 4 indicates,
10 does not resemble the method by which statisticians develop sample sizes for
11 surveys because it does not curtail and prioritize transaction types into a succinct
12 list that produces feasible sample sizes.

13 Besides my theoretical and practical objections to Table 4, it is also
14 important to remember that the purpose of the 2005 Transaction Time Study was
15 not to produce national level mean estimates for each transaction type. The
16 purpose of the study was to update the established transaction time econometric
17 model. Under that premise, Table 4 does not have the same implications as it
18 might if national level estimates were necessary.

1 **III. COMPARISON OF 2005 TRANSACTION TIME STUDY TO 1996**
 2 **TRANSACTION TIME STUDY**

3
 4 There are numerous similarities in the sample design and data collected
 5 between the 2005 Transaction Time Study and the 1996 Transaction Study
 6 which was sponsored by witness Brehm in Docket R97-1. This, as one might
 7 suspect, was not accidental²⁰. The variabilities from the 1996 study, although not
 8 specifically mentioned in the R97-1 Opinion and Recommended Decision, were
 9 incorporated, unaltered, into the Commission's cost segment 3 model. As a
 10 result, the 1996 transaction study established a benchmark for sample design
 11 and data issues and, appropriately, it was used extensively to design the
 12 corresponding 2005 study. The table below illustrates many of the attributes
 13 from the two studies.

	2005 Study	1996 Study
Post Offices Sampled	27	20
Sample Design	Stratified Random	Stratified Random
Days Sampled Per Office	2 or 3 days	2 to 2.5 days
Month of Study	April and May	July
Stratification Variable	Revenue	CAG (proxy for revenue)
Data Collection Device	Palm Pilots	PDT-3300 (Handheld scanners)
Original Observations	9,450	12,193
Observations in Final Database	7,915	7,175

14
²⁰ I attended several of the planning meetings for the study, so I am aware of the manner in which the current study materialized.

1 The similarities are obvious from the table. Both studies used a stratified
2 random design, with the same stratification variables, as well as electronic data
3 collection tools, sampled approximately the same number of days, and ended up
4 with a similar number of transactions in the final database.

5 The most significant differences between the two studies were driven by
6 technological advances that occurred over the nine years between them. First,
7 the data collection device used in 2005, the Palm Pilot, was superior to the
8 handheld scanners from 1996. They were easier to program and use. Second,
9 and most importantly, the 2005 data was merged to the POS-ONE transaction
10 database, and as a result, has to be more accurate than its predecessor. In
11 addition as witness Nieto states,

12 Also, in utilizing the POS-ONE database allowed data collectors to focus
13 on the accurate recording of the transaction length and provided a much
14 greater level of detail on the products and services comprising the
15 transaction²¹.
16

17 In summary, the 2005 Transaction Time Study had a larger sample of post
18 offices, larger and more accurate final database of transactions, and improved
19 data collection devices. For these reasons, I view the 2005 Transaction Time
20 Study as superior to the 1996 study which, by its incorporation into the
21 Commission's costing model, is the benchmark for developing volume variability
22 factors on window transactions.

23
24
25
26
27

²¹ USPS-T-24 page 3

1
2 **IV. THE 2005 TRANSACTION STUDY UTILIZED A SOUND SAMPLE**
3 **DESIGN WHICH RESULTED IN A RELIABLE DATABASE**
4

5 After thoroughly reviewing the sample design and data quality issues for
6 The 2005 Transaction Time Study, I conclude that a sound and defensible
7 process was used for each in developing the final database of 7,915
8 transactions.

9 First, the preparation for the study involved a thorough investigation of the
10 coverage and scope of the frame (POS-ONE offices). The frame used to select
11 offices provided ample coverage of the universe (ninety percent of revenue) and
12 contained a diverse mixture of transaction types which were necessary for the
13 construction of a defensible econometric model.

14 Second, the sample design utilized by the 2005 Transaction Study can
15 easily be justified, and it was implemented the way it was designed. A common
16 sample design, stratified random, was used, and revenue per office and
17 geographic area were employed as stratification variables. The result was a
18 design that ensured that both large and small revenue offices across all
19 geographic areas were included in the final sample of twenty-seven post offices.

20 Third, the use of Palm Pilots to collect the data was instrumental in
21 collecting accurate information from the study. They provided the data collectors
22 with a simple method for recording important instances during a transaction with
23 the touch of a button. They also allowed data collectors to easily inspect the
24 information record so that many inconsistencies or errors could be fixed by the
25 data collector.

1 Lastly, the ability to match and validate collected data with the POS-ONE
2 transaction database was critical to the success of the study. Each piece of
3 information recorded by the data collectors was matched with the POS-ONE
4 database. Information that could not be matched with POS-ONE was dropped
5 from the final dataset. As a result, the final dataset of 7,915 transactions is highly
6 likely to be accurate.

1 CHAIRMAN OMAS: Mr. Kelley, that completes
2 your appearance here today. We appreciate your
3 testimony and your contribution to our record. Thank
4 you very much.

5 THE WITNESS: Thank you.

6 (Witness excused.)

7 CHAIRMAN OMAS: Let's see. Mr. Heselton,
8 would you please identify your witness. Mr. Heselton?
9 I'm sorry I caught you off guard. We're moving ahead
10 a little bit.

11 MR. HESELTON: It just adds to the
12 challenge, Mr. Chairman.

13 The Postal Service calls Mr. Oronzio to the
14 stand.

15 CHAIRMAN OMAS: Mr. Oronzio, would you
16 please remain standing so I can swear you in, please?
17 Would you raise your right hand?

18 Whereupon,

19 CHRIS R. ORONZIO

20 having been duly sworn, was called as a
21 witness and was examined and testified as follows:

22 CHAIRMAN OMAS: Please be seated.

23 Mr. Heselton, when you're ready.

24 MR. HESELTON: Almost there, Mr. Chairman.

25 CHAIRMAN OMAS: Fine. I understand. We're

1 just a little lost this morning, but we'll get there.

2 (The document referred to was
3 marked for identification as
4 Exhibit No. USPS-RT-15.)

5 DIRECT EXAMINATION

6 BY MR. HESELTON:

7 Q Mr. Oronzio, would you please introduce
8 yourself for the record?

9 A Yes. My name is Chris Oronzio.

10 Q Now, you've been provided with two copies of
11 a document entitled Rebuttal Testimony of Chris R.
12 Oronzio on Behalf of the United States Postal Service
13 and designated USPS-RT-15.

14 Have you had an opportunity to examine these
15 documents?

16 A Yes, I have.

17 Q And was this testimony prepared by you or
18 under your direction and control?

19 A Yes.

20 Q Do you have any changes or corrections to
21 make?

22 A No.

23 CHAIRMAN OMAS: I'm sorry. We didn't hear
24 that response.

25 THE WITNESS: No.

1 CHAIRMAN OMAS: Okay. Thank you. Is your
2 mic on? Good. Thank you.

3 BY MR. HESELTON:

4 Q And if you were to testify orally today,
5 your testimony would be the same?

6 A Yes.

7 MR. HESELTON: Mr. Chairman, I ask that the
8 rebuttal testimony of Chris R. Oronzio on behalf of
9 the United States Postal Service and designated
10 USPS-RT-15 be admitted into the record.

11 CHAIRMAN OMAS: Is there any objection?

12 (No response.)

13 CHAIRMAN OMAS: Hearing none, I will direct
14 counsel to provide the reporter with two copies of the
15 corrected rebuttal testimony of Chris R. Oronzio.

16 That testimony is received into evidence and
17 is to be transcribed into the record.

18 (The document referred to,
19 previously identified as
20 Exhibit No. USPS-T-15, was
21 received in evidence.)

22 //

23 //

24 //

25 //

Postal Rate Commission
Submitted 12/4/2006 3:25 pm
Filing ID: 55271
Accepted 12/4/2006

USPS-RT-15

**BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON DC 20268-1001**

POSTAL RATE AND FEE CHANGES, 2006

Docket No. R2006-1

**REBUTTAL TESTIMONY
OF
CHRIS R. ORONZIO
ON BEHALF OF THE
UNITED STATES POSTAL SERVICE**

TABLE OF CONTENTS

1

2 AUTOBIOGRAPHICAL SKETCH.....3

3 PURPOSE OF TESTIMONY4

4 TOPICS OF REBUTTAL.....4

5 A. Hand Counting High Volume QBRM.....4

6 B. Craft and Supervisory Work-hours.....5

7 C. Volume and Work-hours in Letter Distribution10

1 **AUTOBIOGRAPHICAL SKETCH**

2 My name is Chris Oronzio. I joined the USPS in 1979 after graduating from
3 Fordham University with a degree in Mathematics. I was originally assigned to
4 work on the letter sorting machines and worked my way up to Delivery Service
5 Supervisor, and Manager Accounting and Budget, in Fort Lauderdale FL. In
6 1992 I was promoted to Manager In-Plant Support, and served in field mail
7 processing centers in Florida until 1995. In 1996 I was promoted to In-Plant
8 Support Manager in Atlanta. I also served as Manager of Distribution Operations
9 for automation on tour 1, Senior Plant Operations Manager, Manager Operations
10 Programs Support, Maintenance Manager, and Plant Manager. Currently I am
11 the Manager of Processing Center Operations for the USPS in headquarters, and
12 have been managing Processing Center Operations since January of 2006. My
13 office is responsible for managing the design, development, implementation,
14 evaluation, monitoring, and improvement of national policies, procedures,
15 methods and systems with regard to letter, flat, image, and forwarded mail
16 processing for Processing and Distribution Centers, Processing and Distribution
17 Facilities, Delivery Distribution Centers, and Remote Encoding Centers. This is
18 my first time testifying before the Commission.

1 **PURPOSE OF TESTIMONY**

2

3 The purpose of my testimony is: (1) to explain why it is operationally efficient to
4 manually count High Volume QBRM under some circumstances; (2) to explain
5 the relation between changes in mail processing craft work-hours and
6 subsequent changes in mail processing supervisory work-hours; and (3) to
7 explain why it is operationally implausible to expect an increase in letter volume
8 (FHP), as such, to cause a disproportionately large increase in manual letter
9 volumes.

10

11 **TOPICS OF REBUTTAL**

12 ***A. Hand Counting High Volume QBRM***

13

14 MMA witness Bentley states that "I seriously question the reasonableness of the
15 new sampling study that estimates 27% of all QBRM letters are hand counted."
16 Further, he refers to this estimate as "obviously erroneous". (MMA-T-1, page 15,
17 lines 21-23 and 25) As I explain below, the 27% estimate is consistent with
18 operational practice. Mr. Bentley's doubts are unfounded.

19

20 A High Volume QBRM mailer may not actually receive much mail on any given
21 day. Even mailers who pay the accounting fee and prepare their return pieces so
22 they can be machine counted by the BRMAS system, do so based on their
23 expected quarterly volume, which may be concentrated in relatively few days per
24 month. QBRM for an office or box section is generally separated on a primary

1 scheme to be subsequently processed in a BRMAS scheme running on a DBCS
2 or MPBCS. On any given day there may be only a modest amount of mail,
3 perhaps not even 4 or 5 trays, for many such schemes. In such cases, we face
4 the choice of spending perhaps 15 or 20 minutes to set-up and sweep a machine
5 just to run less than 5 minutes worth of mail. In addition, there is generally some
6 mail for most BRMAS schemes that trickles in after the scheme has run. In all
7 these instances, it is more efficient to sort and count the mail by hand.

8
9 It is my understanding that USPS rebuttal witness Abdirahman will describe the
10 BRM process in more detail.

11

12 ***B. Craft and Supervisory Work-hours***

13

14 Witness Buc claims that "the Postal Service has overstated its costs by
15 understating cost reductions for supervisors in FY 2006, FY 2007, and the Test
16 Year." (DMA-T-1, page 2, line 7-9) As I explain below, supervisory cost
17 reductions are included in their entirety as an implicit part of the Breakthrough
18 Productivity Initiative (BPI) each year. Mr. Buc's claim is false.

19

20 Purchase and deployment of most new mail processing equipment are justified
21 by savings in clerk and mail handler work-hours. When a plant receives a new
22 piece of equipment, the estimated craft savings are removed from the plant's
23 operating budget. In theory and on the average, there should be an

1 accompanying change in supervisory hours – perhaps a reduction in floor
2 supervision and an increase in maintenance supervision. At the plant level, a
3 new piece of equipment might, for example, save two craft positions. As an
4 empirical matter, the ratio of craft positions per supervisor has been
5 approximately 22 to 1 in recent years. If, for the sake of discussion, that 22 to 1
6 ratio is applicable to this hypothetical piece of equipment, then it would call for
7 the elimination of 0.09 supervisors. In the same year, there would be other
8 equipment changes, volume changes, changes in network responsibilities,
9 changes in supervisory administrative duties, etc.; all impacting the need for
10 supervision. The specific circumstances of the plant determine whether all these
11 changes cumulatively result in a decision by plant management to add or delete
12 supervisors. The annual budget process ensures that these decisions are made
13 properly at each plant.

14
15 In the final analysis, the Breakthrough Productivity Initiative (BPI) each year is
16 the difference between Postal management's consensus view of realistic savings
17 opportunities and savings that have been specifically identified in operating
18 programs such as new equipment deployments. Supervisory efficiencies, if any
19 are actually achieved, would be part of this difference.

20
21 Headquarters allocates BPI targets to each Area in dollars. Accompanying the
22 budget, there is an extensive analysis of savings opportunities down to the plant
23 level, but plant management is free to achieve economies using these

1 suggestions or using ideas of their own, based on the full range of operating
2 issues unique to that plant. The Areas consider the full circumstances faced by
3 each plant in allocating budgets to them. A revised supervisory plan is a normal
4 part of each plant's planning to stay within their budget allocation, but changes in
5 supervisory positions and the resulting supervisory ratios will vary among plants
6 due to their individual circumstances.

7

8 It is instructive to chart the relation between craft and supervisory work-hours in
9 the last few years. The first chart below shows changes from the previous year
10 in total supervisory work-hours compared to changes in Function 1 (i.e. plant)
11 hours less supervision and RBCS (LDC 15) for FY 2000 through FY 2005. (See
12 USPS-LR-L-192, Supervisors Charts.xls.) The second chart is identical, except
13 that the supervisory line is moved one year to the left in order to compare each
14 year's savings in craft work-hours to the next year's savings in supervisory work-
15 hours. The closer, but still very rough, alignment of the second chart suggests
16 that supervisory savings occur primarily in the next year, as might be expected
17 from the way our budget system functions.

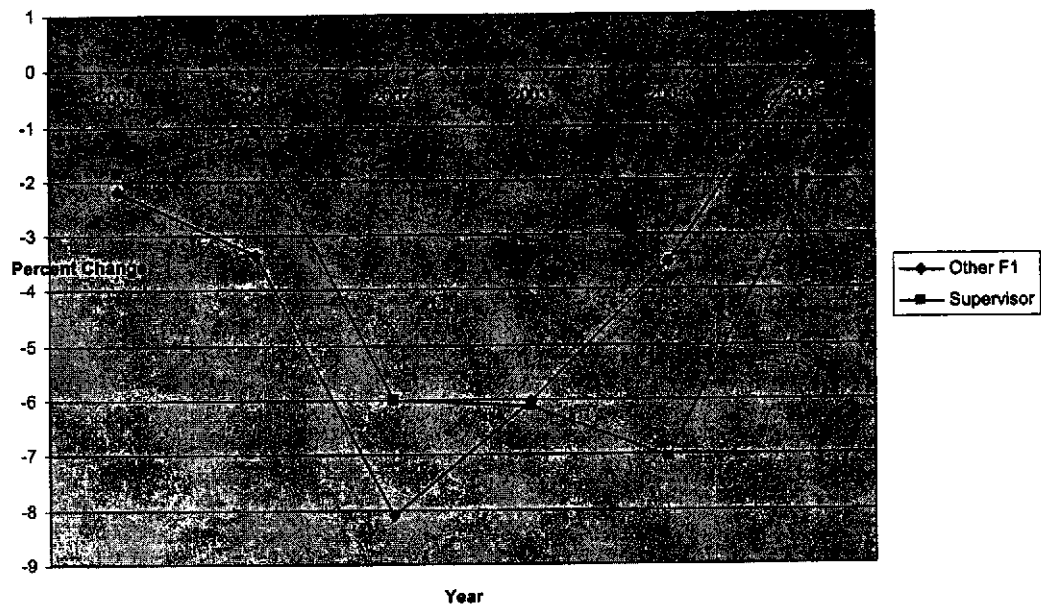
18

19 Although the supervisory ratio has remained approximately 22 to 1 in recent
20 years, there is nothing preordained about this; it is simply the result of the
21 decisions made at each plant. There was a time earlier in my career when the
22 supervisory ratio was 20 to 1, and it could conceivably move back to that in the
23 future depending on the supervisory needs of each plant. For example, delivery

1 point sequencing for flats will begin in 2008 and may require more supervisory
2 effort beginning that year since such significant changes to operating processes
3 commonly require additional supervision. However, the savings target for FY
4 2008 remains at \$1 billion, including BPI. If, within that target, fewer savings are
5 realized in supervision, the field will need to achieve greater savings elsewhere in
6 its budget, and the supervisory ratio will change.

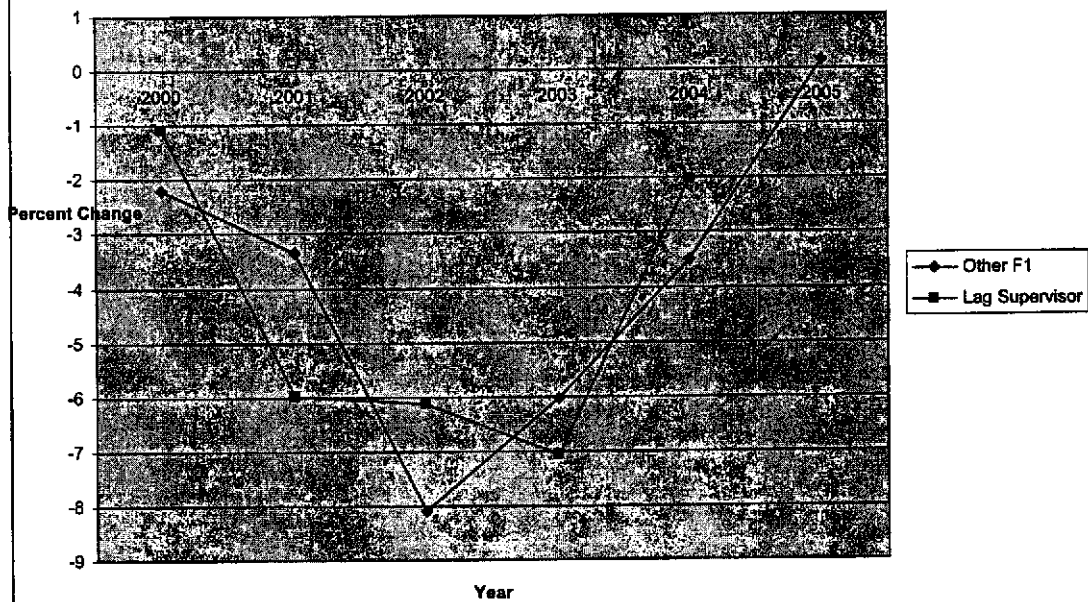
7

Percent Change from the previous year in Supervisor and Other Function 1 Hours



1

Percent Change from the previous year in Lag Supervisor and Other Function 1 Hours



2

3

4

1 **C. Volume and Work-hours in Letter Distribution**

2

3 In his testimony, Professor Roberts concludes that "In other words, an expansion
4 of mail volumes (FHP) results in more than a proportional increase in the use of
5 the manual operation (TPF in manual), but an increase in manual labor hours
6 that is proportional to the increase in TPF." (OCA-T-1, page 15 beginning at line
7 22). Further he suggests that this effect occurs because "...sometimes
8 automation compatible letters get handled in the manual unit for reasons that
9 might be related to capacity constraints or other things in the automated
10 operation." (Transcript, volume 23, page 8434, lines 13-17.)

11

12 Professor Roberts measures the relation between plant FHP and manual TPF
13 statistically. I would not question his computational accuracy, but his conclusion
14 that an FHP increase "results in" a disproportionately large increase in manual
15 TPF is not operationally plausible. The reason he suggests – diversion of
16 automation letters to manual processing – is even less plausible.

17

18 Automated processing is more than ten times as productive as manual. Plant
19 managers face strong incentives to meet their budget objectives and would avoid
20 such diversion to inefficient processes. The DBCS is the main letter sorting
21 machine and a plant is equipped with enough DBCSs to complete their Delivery
22 Point Sequencing (DPS) in time to dispatch sequenced letters to the delivery
23 units each morning. As a practical matter, all mail for a delivery unit needs to be

1 present before the DPS run, so DPS defines the peak requirement for these
2 machines. Prior to the time of the DPS runs, there is plenty of DBCS capacity
3 available to sort automation compatible letters to the 5-digit schemes required for
4 the DPS sorts.

5

6 Even during the DPS period, automation letters are unlikely to be diverted to
7 manual sortation in the plant for three reasons. First, if there were shortages of
8 DBCS capacity during the DPS period, OCRs, which are largely idle at that time,
9 would be used to sort automated letters to carrier route. Second, to sort letters to
10 individual carrier routes by hand requires the clerk to memorize the addresses
11 served by each route. As manual processing declined, it became difficult to
12 maintain these skills in the plant and it is commonly the case that such skills are
13 found only in delivery units today. Third, even to sort letters by zip code requires
14 a sorting case, and floor space is precious in today's plants. The number of
15 manual cases has been reduced to a minimum, so even if somehow there were
16 manual clerks with the necessary skills available, there wouldn't be anywhere for
17 them to work in the plant.

18

19 Since the scenario suggested by Professor Roberts is unrealistic, what accounts
20 for the disproportionate manual volumes he measures? I can suggest two
21 possibilities.

22

1 First, as is well known, the peak letter volumes occur each year during the
2 holiday mailing season. Simultaneously, there is a *change in the composition* of
3 the letter mail stream, with holiday greeting cards as the most notorious example.
4 Perhaps Professor Roberts is actually measuring the impact of a *change in*
5 *composition* that is distinct from the change in volume, but occurs at the same
6 time. It is my understanding that USPS rebuttal witness Bozzo will examine this
7 possibility quantitatively.

8
9 Second, as letter processing has shifted from manual to automation with
10 machine counts of TPF and TPH available for most of the mail, management use
11 of FHP has declined. This decline is both because FHP is a very approximate
12 measure of plant workload and because of data quality problems with FHP.

13
14 Fundamentally, a plant's workload consists of accepting mail at one sort level
15 and transforming that mail into the finer sort level required for dispatch. The
16 difference between these two sort levels is a primary determinant of a plant's
17 workload, and it is a difference that varies among plants. TPH productivity for
18 groups of MODS operations is largely independent of this difference, capable of
19 subdividing a plant for detailed analysis, and appropriate for comparison among
20 plants. By contrast, FHP productivities are conceptually difficult to define below
21 the plant level. They have little utility for management within the plant, while
22 comparisons between plants are distorted by the varying spreads between input
23 and output sort levels.

1

2 FHP data quality has always been problematic since it depends on weighing
3 batches of mail and applying a conversion factor, which may itself be affected by
4 seasonal changes in the composition of mail within a category. Even rain and
5 humidity can have an effect. Due to these problems, we are experimenting with
6 methods to eliminate weighing in the computation of FHP. But until the problems
7 are resolved, if Professor Roberts' analysis depends on any precision in FHP,
8 either in total or by season, I would be skeptical of his results.

1 CHAIRMAN OMAS: This now brings us to oral
2 cross-examination.

3 Two parties have requested oral cross-
4 examination. Direct Marketing Association, Inc., Mr.
5 Ackerly?

6 (No response.)

7 CHAIRMAN OMAS: Mr. Ackerly is not present.
8 Thank you.

9 Mr. Costich, Office of the Consumer
10 Advocate?

11 MR. COSTICH: Thank you, Mr. Chairman.

12 CHAIRMAN OMAS: You may begin.

13 CROSS-EXAMINATION

14 BY MR. COSTICH:

15 Q Good morning, Mr. Oronzio.

16 A Good morning.

17 Q I'm Rand Costich for the OCA. I'll be
18 asking you a few questions.

19 Could you look at your testimony at page 11,
20 lines 6 through 9? Here you say that letters are
21 unlikely to be diverted to manual sortation, and you
22 say that if there were shortages of DBCS capacity
23 during the delivery point sequencing process volume
24 would be shifted to OCRs. Is that correct?

25 A Yes.

1 Q Does that mean that there would be higher
2 TPF recorded on the OCRs than usual?

3 A It's possible, yes. What this says is that
4 during a DPS processing under heavy volume periods
5 there may be volume that is not automation compatible
6 or when it goes through the process of DPS they're
7 rejected, so we use the OCRs rather than a manual sort
8 to handle the rejected volumes so it may cause
9 somewhat of an increase in the OCRs when we use them.

10 Obviously they're being used when they
11 normally wouldn't be, so there would be more volume
12 through them than normal, but it's not a normal
13 occurrence.

14 We have a window of opportunity with DPS
15 processing on many days, so additional volumes would
16 be absorbed in the DPS window prior to having to
17 divert to OCR.

18 Q Are you saying that the only volume that
19 would go to the OCRs is rejects from the --

20 A Generally the OCR volume would be mail
21 that's rejected or mail that couldn't be handled in
22 time to be delivered to make timely service on the
23 piece.

24 Q Okay. That latter use of the OCR would
25 result in volume only being sorted to five digits?

1 A Well, it would result in carrier route so it
2 would be sorted to the carrier level because OCRs can
3 have schemes just like a barcode sorter, and you can
4 run that volume through an OCR and get the mail to the
5 carrier level, so it actually would be to the carrier
6 sort.

7 Q But then the carrier would have to case it
8 into delivery sequence?

9 A Yes.

10 Q So in those situations the plant would
11 actually be imposing extra costs on the delivery unit?

12 A Yes. If the carrier had to case it, it
13 would cost the delivery unit more than if they didn't.
14 Yes.

15 Q Could you look at lines 14 and 15 on that
16 page? Here you say that the number of manual cases in
17 plants have been reduced to the minimum. Is that
18 right?

19 A Yes, that's right.

20 Q Is this the minimum needed to sort
21 nonmachinable letters?

22 A This is the minimum needed to sort
23 nonmachinable and any volume that would be rejected,
24 so yes. It would be based on analysis and studies we
25 do in the facilities.

1 Q Has the volume of nonmachinable letters and
2 rejects been fairly constant for the last few years?

3 A Actually they've been reduced significantly
4 by technological advances and software changes, so the
5 amount of mail that's actually coded by machines has
6 increased over the last few years so there's less and
7 less mail that's handled manually.

8 Q The volume of nonmachinable mail, mail that
9 just can't be put on the automation for physical
10 reasons, has that been fairly constant?

11 A That's actually been reduced also. However,
12 certain times of the year we have an increase in that.
13 This is one particular time right now during the
14 holidays where folks use holiday cards, and they tend
15 to be more out of spec with the machinery.

16 They may be a little larger, different
17 colors, so there may be more of those pieces that
18 aren't necessarily handled by the automation as well
19 as others, so it's more a function of time of year and
20 mail mix rather than just the overall increase in
21 volume.

22 Q I think you said that the volume of
23 handwritten letters that has to go to manual has been
24 declining. Is that correct?

25 A Yes, it has.

1 Q And that's because more of that handwritten
2 mail can actually be read by OCRs?

3 A Yes, by technology, whether it's OCR, RCR or
4 any of the acronyms we use for those platforms that
5 code letters.

6 Q And that's without intervention of remote
7 encoding. Can these machines encode letters that have
8 incorrect or incomplete addresses?

9 A Well, there's an algorithm that they go
10 through to process the mail and put a barcode on it,
11 and it will look through and there's certain rules
12 that will be applied to give that piece a barcode, so
13 yes, it can do some of that.

14 Obviously the more information on a mail
15 piece the better or more accurately it does it.

16 Q On my street a few years ago a building was
17 demolished so that the address literally disappeared.
18 Unfortunately, the numerals for that address are the
19 same as my address. It was on North Washington
20 Street, and I live on South Washington Street.

21 I have been getting the mail for that
22 address for the last three years. It's been barcoded
23 to me. Is that an example of what the software can
24 do?

25 A Not necessarily. That's an example of what

1 can happen, yes, but not what the software can do.
2 There's many more pieces that we handle correctly.

3 Q If these piece that are coming to me had
4 been recognized at some point as being misaddressed,
5 they would have been either returned to the sender or
6 somehow rebarcoded?

7 A Well, it all depends on if the sender put in
8 a change of address if they moved. There's a lot of
9 factors at play.

10 The folks who actually handle that delivery
11 unit have to go into the system and take those
12 deliveries out so our address database wouldn't
13 recognize that address because it's no longer there.
14 There's folks who live there that want to get their
15 mail, so they would put in information in the system
16 to say send my mail somewhere else, and then also the
17 directional is really what you're talking about.
18 There was a problem in the directional on the piece.

19 There's some analysis we can do about that,
20 and it may be the way it's written or the way it's
21 printed. If it's not clear, if the font is not right,
22 then a machine may see a directional in one way as
23 opposed to some other way, and that was where you may
24 get that happening where you get someone else's mail
25 piece, but it should be rare.

1 Q You mentioned in your testimony dark colored
2 envelopes or square. I guess you haven't said square,
3 but that would also be a problem.

4 Do you know if the Postal Service has been
5 trying to educate envelope producers about the
6 problems with dark colored envelopes or square
7 envelopes?

8 A Yes. There are significantly less dark
9 colored envelopes. I think everyone has gotten on the
10 bandwagon except maybe my wife. I mailed a lot of red
11 cards this year, even though I tried to tell her not
12 to do that.

13 They're still out there, but we have worked
14 with the customers and the envelope manufacturers and
15 greeting card companies.

16 Q So there's been a reduction of nonmachinable
17 pieces for those reasons?

18 A Yes.

19 Q Do you think the Postal Service has reached
20 the point that there's just a minimum of nonmachinable
21 pieces now and that they will always be there?

22 A I wouldn't say that we've reached the
23 minimum yet. With technology advancements that we
24 have we can continue to drive that volume down to a
25 negligible amount. Right now there's still, like you

1 said, some situations where you have to handle it
2 manually.

3 As the technology advances more and more,
4 we'll be able to shrink that down less and less. Now,
5 will it go to zero? Probably not, but we'll try to
6 get it as close to zero as possible.

7 Q If you could cull the envelopes, the letter
8 envelopes that are nonmachinable because of aspect
9 ratio flats, if you could just redefine those letters
10 as flats, would that mean that there would simply be
11 no nonmachinable letters left?

12 A I'm not sure I understand the question as
13 far as flats go, but there's a lot of reasons why
14 pieces are nonmachinable, not just their shape, their
15 thickness.

16 The fact that they're out of the automated
17 mail path may cause them to be handled manually, and
18 it has nothing to do with the individual piece itself,
19 so a piece may look like a perfectly automatable
20 piece, but if it rides along another piece and goes
21 with it it could end up in a manual operation as well.
22 It's not only about the shape.

23 Q So there will always be rejects or other
24 kinds of errors on the automation that will put a
25 piece into manual?

1 A Yes. I don't see us getting 100 percent
2 machine. Close, though. Ninety-nine, 99.9.

3 Q In 2005, 36 percent of the hours used to
4 sort letters were in manual operations. Does that
5 sound like a number of hours that goes along with a
6 tiny proportion of nonmachinable or reject pieces?

7 A I don't know what the volume was in 2005,
8 but 30 percent with about an eight percent on -- now,
9 you're talking about letters and flats when you talk
10 about them or just letters?

11 Q Just letters.

12 A Thirty percent with eight percent of the
13 volume is ballpark actually because of the amount of
14 time it takes to handle.

15 The key is to rescue the piece if it gets
16 into manual and bring it back to automation because if
17 it goes into the manual path there's multiple
18 handlings. A machine has 222 bins, so if you run a
19 piece of mail on a machine it actually gets sorted to
20 a finer depth closer to where it needs to go. When
21 you put it in a case you've only got 36 to 40
22 separations, so somewhere you have to handle it again.

23 That's the ultimate dilemma with manual.
24 Not only does it take longer, but there's more
25 handlings of the individual piece down the road.

1 Q So you're saying that if a person casing
2 letters thought that a piece really could be run on
3 automation he would send it back to automation?

4 A In Operations we have folks in the manual
5 operations called gatekeepers that actually do rescue
6 mail back because, like I said before, there's ride
7 along pieces.

8 We also have folks as we cull mail on
9 machines if there's a jam or a problem up front we
10 pull pieces out, so the idea is that a good,
11 knowledgeable employee will pull the pieces out that
12 would cause a problem and then flow the pieces that
13 are no problem back through the automation.

14 Q Do manual hours in letter sorting peak in
15 the first quarter?

16 A That's a good question. Generally manual
17 flat hours may be higher in the first quarter, and
18 that's in general over the whole United States.

19 I haven't looked at it over individual areas
20 or through the last year's numbers, but letter volume
21 may peak actually this time of year, more the holiday
22 season.

23 Q This is the first quarter?

24 A Yes. We're going to go into the second,
25 though, so it's going to end up this will probably be

1 higher for flats and a little higher in letters, but
2 we really haven't had a big impact in letters with the
3 technology.

4 Q In your testimony you say that the number of
5 cases in the plants has been reduced to the minimum,
6 so that means the minimum even to handle the holiday
7 crush?

8 A Cases aren't used every hour of every day
9 just like the machines aren't, so there's room to work
10 mail if you had to within the 24 hour period.

11 The secret for us in heavy volume is to get
12 mail in as early as possible to identify those pieces
13 that aren't conforming, that don't stay in automation,
14 identify those as early as possible and expand the
15 window of operation earlier in the night because
16 certainly we may have manual cases, but it's manual
17 for peak time.

18 There's a lot of days where the manual cases
19 may not be used but for an hour or two in certain
20 operations, so it's not that there isn't capacity
21 there to work more manual mail if we had it.

22 Q Could you look at lines 16 and 17 on page
23 11? Here you're saying that even if there were manual
24 clerks who could sort I guess to carrier route is what
25 you're talking about here there wouldn't be any place

1 for them to work? Doesn't that mean that there's no
2 cases for them to work at?

3 A Right. Well, when you label a case and you
4 designate cases for other operations, these manual
5 cases for a scheme have to have certain identification
6 on them.

7 When we took out the cases in the plants we
8 took out those cases that were designated for the
9 secondary distribution because it rode along with the
10 same premise that to keep folks in on the scheme
11 knowledge would be costly and that volume was being
12 diminished, so those are the cases we removed.

13 The cases that remain in the plants are
14 cases that either process three digit or some to five
15 digit SCS processing, so we don't have -- there may be
16 a handful of plants that have secondary distribution
17 cases on there, and they all are coming up with plans
18 to reduce those cases, take them out and shift it to
19 the delivery units.

20 Q So if a DBCS wasn't available for some
21 reason, broke down or something during the three digit
22 or five digit sort, then there would be manual
23 capacity to sort that mail?

24 A During a three digit and five digit sort
25 there's actually quite a bit of DBCS capacity. DBCSs

1 are utilized during the DPS window to a high degree,
2 but even then there's almost an average of a 15 or 20
3 percent unused portion where a sort plan may be
4 loaded, but the mail is not run.

5 Earlier in the night our DBCSS are used
6 maybe 50 percent of the time, so there's a great
7 opportunity to use another machine. I mean, I've done
8 it where you can go to other machines. They're all
9 the same. The question is when you get into the DPS
10 window is when you have to be a little more creative,
11 and that's when you use the OCRs.

12 Q Could you look at page 12, lines 2 and 3?
13 Now, here you have a reference to the composition of
14 the letter. Are you referring to proportions of
15 stamped collection mail within the outgoing mail
16 stream?

17 A Well, it has to do specifically with a
18 change in composition of all the outgoing mail, so,
19 yes, it would include stamped. It would include the
20 holiday cards. It would include individual metered
21 pieces that may be dropped in collection boxes as
22 well.

23 Q This change in composition is not going to
24 affect processing unless it's an increase in
25 nonmachinable pieces. Isn't that right?

1 A Well, the change in composition deals with
2 the change in the shapes, size or color, so, yes, it
3 would challenge our technologies to continue to keep
4 those pieces in the automated mail stream. Yes.

5 Q Does that mean that there would be more
6 pieces going to manual at that particular time of the
7 year?

8 A The potential at that particular time of the
9 year would be, but there are other times of the year
10 -- first of the month -- where we have a significantly
11 high volume of mail, and yet the mail goes through the
12 machines with no problem and it doesn't result in any
13 additional increases in manual, so it really doesn't
14 have to do with the overall volume.

15 It has to do with what the volume is, what
16 it looks like, what it's shaped like, how successful
17 the machines are in reading and associating the
18 address for a bar code.

19 Q Are you saying that as long as a piece is
20 barcoded, even if it's single piece, or if it's
21 barcodeable by OCR or other reading equipment then
22 it's not going to have any effect on that it might go
23 to manual?

24 A No. What I'm saying is that that wouldn't
25 be the sole reason. The increase in that volume would

1 not be a reason why automatically there would be more
2 pieces that go into manual.

3 Q In the first quarter and particularly during
4 the holiday peak is there sufficient DBCS capacity to
5 sort all the machinable mail and meet service
6 standards?

7 A Yes. Yes, there are enough machines out
8 there. If an operation has a good production plan and
9 the managers follow the plan, there's no reason why
10 they should have delays.

11 Q Suppose that in the first quarter you got
12 the volume increase that you're accustomed to, but
13 there was no change in composition. Would some DBCS
14 work get shifted to OCR in that situation?

15 A Some may. Some may.

16 Q The TPF in the OCR operation would go up?

17 A Somewhat, yes.

18 Q And the TPF in the DBCS operations would
19 essentially be capped at their capacity?

20 A I think that if that were to occur then the
21 management may not have utilized that full capacity of
22 DBCSs.

23 The only time that would occur is if you get
24 mail late and you have a dispatch and you have to get
25 the mail out to the customer. That's when you no

1 longer would have that DBCS capacity because you've
2 got a truck waiting to go, and that's when you make
3 your decision to work on another piece of machinery to
4 get the mail out, to get it to the customer.

5 If it's earlier in the night there are times
6 even in heavy volume where you have the ability to
7 absorb that mail into your existing runs and get more
8 efficiency and get the mail through the DPS still, so
9 it really depends on when that occurs.

10 Q So you're saying it's lateness, not volume,
11 that would cause a shift to the OCR?

12 A I'm saying that would be one of the times
13 where a manager would shift to the OCR in order to
14 effect service on the piece.

15 It wouldn't necessarily be all the time, and
16 it wouldn't be the only time, but at some point that
17 may be one of the reasons why you would do that.

18 Q There are other reasons?

19 A No. The idea is to absorb as much into DPS
20 to get the mail as early as possible and get as much
21 volume through the machines that are designed for the
22 mail.

23 If there's something that occurs and you
24 can't then you have to do these other things, but
25 they're rare.

1 MR. COSTICH: Thank you. I have no further
2 questions.

3 THE WITNESS: Thank you.

4 CHAIRMAN OMAS: Thank you, Mr. Costich.

5 Is there anyone else who wishes to cross-
6 examine Mr. Oronzio?

7 (No response.)

8 CHAIRMAN OMAS: Are there any questions from
9 the bench? Commissioner Tisdale, please?

10 VICE CHAIRMAN TISDALE: Mr. Oronzio, how are
11 you doing this morning?

12 THE WITNESS: Good. How are you?

13 VICE CHAIRMAN TISDALE: All right. I heard
14 Mr. Costich state to you that 36 percent of the budget
15 for letters was used on manual letters.

16 THE WITNESS: That's a little high. That
17 was 2005. I'm not aware of what the number was in
18 2005 offhand.

19 VICE CHAIRMAN TISDALE: Okay. You think
20 that's a little high?

21 THE WITNESS: Yes.

22 VICE CHAIRMAN TISDALE: I thought your
23 response was that it sounded --

24 THE WITNESS: I think 30 is about right.
25 Actually 28 to 30 might be right.

1 VICE CHAIRMAN TISDALE: Okay. If it's 30
2 percent, that seems like an awful lot to spend on
3 manual letters, especially if it's an operation that
4 you're trying to eliminate.

5 THE WITNESS: Productivity is not where it
6 needs to be and the handlings that a mail piece may
7 get are far beyond what they would be to automate the
8 piece, so the idea is to continue to move those pieces
9 into an automated mail stream and reduce those hours.

10 VICE CHAIRMAN TISDALE: Do you have an idea
11 what percentage of those manual letters are rejects
12 from BCSs or OCRs?

13 THE WITNESS: No.

14 VICE CHAIRMAN TISDALE: Is that figure
15 available anywhere?

16 THE WITNESS: I think we can get that
17 information, yes.

18 VICE CHAIRMAN TISDALE: Can you get that to
19 us? Can that be sent to the Commission, please?

20 MR. HESELTON: Mr. Chairman, we will use
21 that five day working as a target. I have no idea
22 what has to be done to assemble these data, but
23 certainly if the Postal Service can supply them within
24 five days it will do that.

25 CHAIRMAN OMAS: We would appreciate it if

1 you could do that. Thank you.

2 VICE CHAIRMAN TISDALE: Actually, I think
3 you covered all the rest of the matters.

4 I had some concern about your previous
5 statement that there really wasn't enough room in the
6 plants to have the cases set up for manual
7 distribution, but I think you covered that fairly
8 well, so thank you.

9 THE WITNESS: Thank you.

10 CHAIRMAN OMAS: Commissioner Goldway?

11 COMMISSIONER GOLDWAY: Thank you. The
12 context of your testimony regards our Commission's
13 understanding of what volume variability is, and there
14 were two points that you made in general that I think
15 I understood.

16 One was that the ability to handle more
17 volume at the same level of efficiency or using the
18 same equipment that you might otherwise work for
19 regular volume involves times when the mail arrives at
20 the plant earlier in the day, so if you're going to
21 have volume variability less than one, it involves
22 moving the mail to an earlier time of arrival at the
23 plant. Is that generally what you're saying?

24 THE WITNESS: Yes. This time of year we
25 work with the folks that bring us the mail, the

1 delivery units, to bring us mail earlier so that we
2 have mail in a window where normally we wouldn't have
3 volume to get ahead of what we anticipate for that
4 day.

5 COMMISSIONER GOLDWAY: Right. And that goes
6 to some concerns that consumers have about a shorter
7 and shorter window in which to drop the mail and the
8 mail gets picked up earlier, but I won't question you
9 about that. That's basically a principle that goes to
10 earlier arrival to have better volume productivity.

11 THE WITNESS: That mail is available.

12 COMMISSIONER GOLDWAY: The other point,
13 which is in the other direction, is that you said that
14 at certain times of the year you can have the same
15 amount of volume, but because the makeup of the volume
16 is problematic you will have higher costs for that
17 same amount of volume.

18 You'll have to use some manual. You'll have
19 mail that goes through more passes than it might
20 otherwise. You might have to reallocate some cases at
21 different times of the day that involves maybe a
22 little more supervisor's time.

23 It appears that there are significant
24 periods of time where the volume variability is
25 greater than one, and that has to do with the makeup

1 of the mail. Am I getting those two principles
2 correct?

3 THE WITNESS: Right. Yes.

4 COMMISSIONER GOLDWAY: Thank you. That's
5 important. I appreciate it.

6 CHAIRMAN OMAS: Is there anyone else?

7 (No response.)

8 CHAIRMAN OMAS: There being none, Mr.
9 Heselton, would you like some time with your witness?

10 MR. HESELTON: Yes, Mr. Chairman. The
11 Postal Service would like about 10 minutes.

12 CHAIRMAN OMAS: Very good. We'll come back
13 at 10:25.

14 (Whereupon, a short recess was taken.)

15 CHAIRMAN OMAS: Please accept my apology.
16 With Ms. McKenzie not here today I'm not on schedule.

17 Mr. Heselton?

18 MR. HESELTON: Mr. Chairman, the Postal
19 Service has a couple of questions for redirect here.

20 CHAIRMAN OMAS: Please proceed.

21 REDIRECT EXAMINATION

22 BY MR. HESELTON:

23 Q Mr. Oronzio, in your conversation with
24 Commissioner Goldway both of you were using terms like
25 productivity and mail processing variability.

1 When you used those terms were you referring
2 to productivity and mail processing variability as an
3 operations concept, or were you using them as they are
4 defined in Postal rate cases?

5 A I was using them as an operational concept.

6 Q Going on to another subject, a related one,
7 suppose you had the same volume one day as opposed to
8 the day before, but the composition of that volume
9 changed to be unfavorable or difficult to handle
10 pieces. What would be the ultimate effect on work
11 hours?

12 A Well, productivity would be reduced so work
13 hours would go up.

14 Q And if you had a situation where you had
15 less volume but the composition remained the same,
16 what would be the effect on work hours of that change?

17 A Less volume and composition remained the
18 same? You'd save hours, have higher productivity.

19 MR. HESELTON: Mr. Chairman, that's all the
20 Postal Service has.

21 CHAIRMAN OMAS: Thank you, Mr. Heselton.

22 Before I dismiss you, Mr. Oronzio,
23 Commissioner Tisdale has an extension to his request.

24 VICE CHAIRMAN TISDALE: I had previously
25 asked that if you could provide us with the portion of

1 letters going into manual that were rejected from
2 DBCSs and OCRs. Can we add to that the nonautomation
3 and facer cancelers?

4 MR. HESELTON: We will seek to provide that
5 information also, Mr. Chairman.

6 VICE CHAIRMAN TISDALE: Okay. Thank you.

7 CHAIRMAN OMAS: Thank you, Mr. Heselton, and
8 thank you, Mr. Oronzio. We appreciate your appearance
9 here today and your contribution to our record. You
10 are now excused. Thank you.

11 THE WITNESS: Thank you very much.

12 (Witness excused.)

13 CHAIRMAN OMAS: Mr. Hollies, would you
14 please identify your witness for the record?

15 Mr. Bozzo has already been sworn in this
16 proceeding.

17 MR. HOLLIES: The Postal Service calls Mr.
18 Bozzo to the stand.

19 Whereupon,

20 A. THOMAS BOZZO

21 having been previously duly sworn, was
22 recalled as a witness herein and was examined and
23 testified further as follows:

24 //

25 //

1 (The document referred to was
2 marked for identification as
3 Exhibit No. USPS-RT-1.)

4 DIRECT EXAMINATION

5 BY MR. HOLLIES:

6 Q Dr. Bozzo, could you introduce yourself for
7 the record, please?

8 A My name is A. Thomas Bozzo. I am a vice
9 president with Christensen Associates of Madison,
10 Wisconsin.

11 Q You have before you two copies of a document
12 identified as USPS-RT-1. Do you recognize that?

13 A I do.

14 Q Was that prepared by you or under your
15 direction?

16 A It was.

17 Q Have there been any changes to that
18 testimony since it was originally filed?

19 A Yes, there have. There were a few minor
20 changes related to Table 2 on pages 15 and 16 of the
21 testimony.

22 Specifically, the corrected version reports
23 a circulation of 4,600 for the *Baldwin Herald* in 2002
24 instead of 5,500 in the original filed testimony. It
25 corrects the spelling of Herald in the title *Burns*

1 *Time-Herald*.

2 It corrects references to publication
3 directories for the *Gonzales Tribune* and also corrects
4 other references in the 2006 volume obtained from the
5 *Ulrich's Directory*, spelled U-L-R-I-C-H apostrophe S.

6 Finally, there were some formatting changes
7 made to the notes to the table that are
8 nonsubstantive. Those corrections are reflected in
9 the documents you provided me.

10 MR. HOLLIES: At this point, Mr. Chairman, I
11 have a confession to offer. I had placed documents
12 effectuating the change to Dr. Bozzo's testimony on
13 the PRC website cued for filing, but did not in fact
14 file them.

15 I did not move forward on that this morning
16 because they still bear yesterday's date and would
17 accordingly not be accepted, so formal errata
18 reflecting the changes that Dr. Bozzo has just covered
19 will be filed later today.

20 Meanwhile, the copies of RT-1 that are in
21 front of Dr. Bozzo do have the correction noted, and
22 the two pages affected, that is page 15 and 16, also
23 indicate the fact that they have been revised
24 effective yesterday.

25 With that, the Postal Service moves that Dr.

Heritage Reporting Corporation
(202) 628-4888

1 Bozzo's rebuttal testimony, USPS-RT-1, be moved into
2 evidence at this time.

3 CHAIRMAN OMAS: Is there any objection?

4 (No response.)

5 CHAIRMAN OMAS: Hearing none, I will direct
6 counsel to provide the reporter with two copies of the
7 corrected testimony of A. Thomas Bozzo.

8 That testimony is received into evidence and
9 is to be transcribed into the record.

10 (The document referred to,
11 previously identified as
12 Exhibit No. USPS-RT-1, was
13 received in evidence.)

14 //

15 //

16 //

17 //

18 //

19 //

20 //

21 //

22 //

23 //

24 //

25 //

Postal Rate Commission
Submitted 11/20/2006 4:16 pm
Filing ID: 55047
Accepted 11/20/2006

USPS-RT-1

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D. C. 20268-0001

POSTAL RATE AND FEE CHANGES, 2006

Docket No. R2006-1

REBUTTAL TESTIMONY
OF
A. THOMAS BOZZO
ON BEHALF OF THE
UNITED STATES POSTAL SERVICE

Table of Contents

List of Tables	ii
Autobiographical Sketch	iii
Autobiographical Sketch	iii
Purpose and Scope of Testimony	1
I. Concerns Raised by Witnesses Heath and Siwek have Minimal Effects for Within-County Tally Identification.	2
I.A. Summary of IOCS Procedures.	2
I.B. Siwek's Claim that the Postal Service Method Does Not Determine Whether Within-County Rates are Paid is Incorrect.	5
I.C. Witness Heath's Interpretation of Regulations Applicable to Non-Subscriber Copies is Faulty and Does Not Point to Significant Tally Assignment Issues.	7
I.D. Other Critiques by Witnesses Heath and Siwek Do Not Point To Substantial Errors.	11
I.D.1. "Wandering Routes".	11
I.D.2. Use of Information in Publication Directories.	13
I.D.3. "Local Appeal" Determination.	16
I.D.4. Reuse of Previous Hand-check Results.	17
I.E. Conclusion: Within-County Tally Identifications are Reliable.	18
II. Witness Siwek's Pooling Proposal is Inappropriate and Likely to Strongly Bias Within-County Periodicals Costs.	19
II.A. The Sampling Standard Errors of Within-County Periodicals Costs Are Reasonable Given the IOCS Sample Size and Within-County Cost Shares.	19
II.B. Witness Siwek's Analysis of BY 2004 and BY 2005 Confidence Intervals Actually Shows That Pooling Is Inappropriate.	20
II.C. Witness Siwek's Pooling Approach is Not a Proper Application of Sequential Sampling.	22

II.D. Witness Siwek's Pooling Approach Yields Biased Unit Costs and is
Inappropriate.....23

III. Conclusion23

List of Tables

Table 1. Nonsubscriber Copies Exceeding 10 Percent Threshold vs. Within-
County Volumes: FY 2005 Within-County Tallies 10

Table 2. Variations in Reported Circulation for FY 2005 Titles 15

Autobiographical Sketch

My name is A. Thomas Bozzo. I am a Vice President with Laurits R. Christensen Associates (LRCA), which is an economic research and consulting firm located in Madison, Wisconsin. My education and experience are described in detail in my direct testimony, USPS-T-12 and USPS-T-46. In addition to the general areas of experience previously detailed, I supervise the data processing that determines the final activity codes for Periodicals tallies in the In-Office Cost System (IOCS).

1 **Purpose and Scope of Testimony**

2 The purpose of this testimony is to rebut critiques of the Postal Service
3 method for identifying IOCS tallies for Within-County Periodicals leveled by NNA
4 witnesses Heath and Siwek.

5 In Section I, I summarize the processing procedures employed in the
6 Postal Service methods and demonstrate that the NNA witnesses' criticisms
7 extensively mischaracterize both the methods and the applicable mailing
8 regulations. I show that the variety of the specific issues raised by witnesses
9 Heath and Siwek have no significant effect on the tally classification outcomes.

10 In Section II, I explain why it would be inappropriate to adopt witness
11 Siwek's proposal to pool cost data from BY 2004 and BY 2005 for Within-County
12 Periodicals. While advertised by witness Siwek as a method of reducing the
13 sampling variation in the Within-County Periodicals costs, its effect is to
14 inappropriately delay recognition of the effects of the IOCS redesign on Within-
15 County Periodicals costs. In the absence of a showing that IOCS systematically
16 over identifies Within-County Periodicals to any appreciable extent, witness
17 Siwek's proposal would impart a strong downward bias to measured Within-
18 County Periodicals costs if adopted.

1 **I. Concerns Raised by Witnesses Heath and Siwek have Minimal Effects for**
2 **Within-County Tally Identification.**

3 **I.A. Summary of IOCS Procedures.**

4 In this section, I provide a summary review of the procedures employed in
5 identifying IOCS tallies for Within-County Periodicals, described in Appendix D of
6 USPS-LR-L-9, and their rationale.

7 In contrast to other classes of mail, Periodicals pieces do not normally
8 bear indicia indicating the postage paid. Some (but by no means all) may be
9 marked with the Periodicals class, but identification of Periodicals is based
10 primarily on title and related information entered by the data collectors and
11 checked in subsequent tally processing.¹ Within-County Periodicals identification
12 is further complicated by the absence of markings identifying pieces claiming
13 Within-County rates. Thus, it is necessary to use information other than rate
14 markings to identify Within-County Periodicals pieces sampled in IOCS.

15 Combining IOCS information with information from other data sources, it is
16 possible to make a reliable determination of eligibility to claim Within-County
17 rates. Indeed, the critiques by witnesses Heath and Siwek focus on cases in
18 which pieces that may appear eligible for Within-County rates to the screening
19 procedures actually pay Outside-County rates. (NNA-T-1 at 7-9 [Section I.A.1];
20 NNA-T-3 at 7-8, lines 14-22 and 1-3, respectively.) As I show below, these cases

¹ Curiously, witness Siwek is unable to state that postage paid is not recorded on Periodicals pieces; he suggests only that it "may or may not be." Tr. 29/9737.

1 do not constitute a significant source of error in the Postal Service's classification
2 process.

3 Once eligibility has been determined, the tally classification follows from
4 the mailer's financial incentive to claim Within-County rates for eligible pieces.
5 The Within-County rates are much lower than the corresponding Outside-County
6 rates, and it is essentially costless for mailers to claim the rates for eligible
7 pieces. Witness Heath agrees that the incentive is very strong. (Response to
8 USPS/NNA-T1-4; Tr. 29/9595.) In effect, mailers who do not claim Within-
9 County rates for eligible pieces are leaving money on the sidewalk.

10 The eligibility determination uses three main processing stages. First, the
11 Postal Service's mainframe processing of the IOCS data identifies candidate
12 Within-County tallies by checking the counties of the entry office and destination
13 for Periodicals titles. However, this processing does not consider other eligibility
14 criteria.

15 In the next stage, the Periodicals tallies resulting from the mainframe
16 processing are linked with mailing statement data from the PostalOne! system
17 where possible. Most tallies (83 percent of the tallies with final Within-County
18 activity codes; USPS-LR-L-9 (revised 7/10/06), Appendix D, hand2005.xls,
19 worksheet 'Final Counts'; see also the response to NNA/USPS-T1-16; Tr.
20 10/2402) are resolved at this stage by determining whether the mailer entered
21 any copies at Within-County rates. If not, an Outside-County code is assigned; if
22 so, a Within-County code is assigned to pieces addressed to the county of origin,
23 and an Outside-County code is assigned otherwise. In the former case, the

1 sampled publication is either ineligible or the mailer otherwise did not actually
2 use Within-County rates. In the latter, the "eligibility" of the publication is
3 determined from the mailer's actual use of the rates, and thus goes beyond
4 checks of simple eligibility as claimed by witness Siwek (NNA-T-1 at 5-6 [Section
5 VI.a]).

6 Where PostalOne! data are not available, the publication title is
7 researched for evidence of eligibility to mail at Within-County rates under the
8 circulation criteria in DMM 707.11.3.1. In nearly all such cases, the circulation
9 and some characterization of content is determined from directories of
10 publications. If the title is determined likely to qualify for Within-County rates
11 under DMM 707.11.3.1, then tallies of pieces addressed to the county of origin
12 are assigned Within-County activity codes. Results of previous checks may be
13 re-used for up to two years. Finally, any tallies for which no information is
14 available retain the activity code from the original mainframe processing.

15 The effect of these tiers of processing are that we use the most dispositive
16 available data—from mailing statements—where possible (the vast majority of
17 tallies), and make reasonable use of available information otherwise. These
18 provide an accurate means for identifying Within-County Periodicals tallies, and
19 given the opportunity to do so, witness Siwek did not identify any specific errors
20 among the 193 tallies assigned Within-County activity codes (response to
21 NNA/USPS-T3-6(c); Tr. 29/9674).

1 I.B. Siwek's Claim that the Postal Service Method Does Not Determine
2 Whether Within-County Rates are Paid is Incorrect.

3 Witness Siwek's most pointed critique of the Postal Service methods for
4 identification of Within-County Periodicals tallies is:

5 Rather than assessing whether the mailer actually paid Within-
6 County rates, the USPS purported to determine whether the
7 publisher was eligible to claim Within-County rates. By choosing to
8 ignore actual postage payments and to focus only on eligibility, the
9 USPS has introduced the possibility that the Within-County pieces
10 that it analyzed were eligible for Within-County rates but were not
11 assessed postage at those preferred rates. (NNA-T-3 at 6, lines 2-
12 6, footnote omitted.)

13 At the publication level, witness Siwek is simply incorrect. By way of support for
14 his claim, witness Siwek cites my response to NNA/USPS-T46-11 (Tr. 9/2340;
15 NNA-T-1 at 6, lines 2-3), in which I confirmed that "if a tally has been reviewed
16 for evidence of eligibility to claim Within-County rates and if evidence has been
17 found to support that claim, that the Postal Service then assumes, in all such
18 cases, that the postage for that underlying piece was actually calculated at
19 Within-County Rates." However, as the review of methods in the previous
20 section should make clear, the primary source of eligibility information is in fact
21 the actual mailing of copies at Within-County rates, as evidenced by mailing
22 statement data. While it should be safe to infer eligibility from the use of Within-
23 County rates, the actual use of the rates is the information that is used to assign
24 Within-County activity codes when available.

25 Nor is witness Siwek correct in implying that the Postal Service method
26 would misclassify pieces if a mailer eligible to use Within-County rates for some
27 reason claimed only Outside-County Rates (NNA-T-1 at 6, lines 4-9). If the

1 mailing statement data for a publication indicate that the mailer solely used
2 Outside-County rates, any tallies for that publication are assigned Outside-
3 County Periodicals activity codes regardless of possible eligibility.

4 Witness Siwek's concerns, admittedly, extend to the ability to identify the
5 use of Within-County rates at the issue or even the individual piece level.
6 However, witness Siwek adduces no evidence at all that mailers fail to claim
7 Within-County rates on individual pieces for which they are eligible to do so.
8 Asked to identify any quantitative information he might have on issue-by-issue
9 variation in Within-County eligibility, witness Siwek admits to having none
10 (response to USPS/NNA-T3-8; Tr. 29/9677). Witness Heath indicates that he is
11 not aware of any instance in which any of his publications lost, gained or
12 regained Within-County eligibility (response to USPS/NNA-T1-3; Tr. 29/9594).
13 Nor is witness Siwek aware of any circumstances in which a mailer would not
14 claim a Within-County rate for an eligible piece (response to USPS/NNA-T3-5(c);
15 Tr. 29/9673). Indeed, witness Siwek narrows his critique to a set of specific
16 cases in which individual nonsubscriber pieces appear to be eligible for Within-
17 County rates but actually are paid at Outside-County rates. (Id.) However, as
18 witness Siwek admits, the ability to employ Within-County rates for nonsubscriber
19 pieces is not determined on an issue-by-issue basis. Tr. 29/9767. I address
20 these cases in the following sections.

1 **I.C. Witness Heath's Interpretation of Regulations Applicable to Non-**
2 **Subscriber Copies is Faulty and Does Not Point to Significant Tally**
3 **Assignment Issues.**

4 NNA witness Heath purports to identify several categories of mailpieces
5 that might appear to be Within-County pieces in the Postal Service analysis but
6 which nevertheless may pay Outside-County rates. NNA-T-1 at 8-9; USPS/NNA-
7 T1-6, Tr. 29/9597. However, witness Heath's analysis depends critically upon a
8 mischaracterization of the Domestic Mail Manual (DMM) regulations applicable to
9 the categories of pieces he identifies. Specifically, witness Heath erroneously
10 leaps from regulations that identify the pieces in question as *non-subscriber*
11 copies to the conclusion that those pieces must be mailed at Outside-County
12 rates. In fact, nonsubscriber pieces that otherwise qualify may be mailed at
13 Within-County rates within certain limitations, per DMM 707.9.3 and 707.11.3.3.
14 Effectively, non-subscriber copies up to 10 percent of the total number of copies
15 mailed at Within-County rates to subscribers during the current year may also be
16 mailed at Within-County rates.

17 Heath's categories are as follows:

18 • Complimentary copies. Heath claims "They would be required to travel at
19 outside County rates." NNA-T-1 at 8, lines 26-27. In fact, DMM 707.7.9
20 states "All complimentary copies... are considered nonsubscriber or
21 nonrequester copies subject to the corresponding rates."

22 • Expired subscription copies. Heath claims:

23 Under DMM 708.7.6 [sic] that lapsed subscriber can be carried at
24 Within-County rates for six months. At the conclusion of six months,
25 the subscriber may remain on the list so long as the paid circulation

1 eligibility is not violated, but must be mailed at Outside-County
2 rates. (NNA-T-1 at 9, lines 3-7.)

3 Heath is correct that for six months, the pieces may be mailed at the "rates
4 applicable to subscriber copies" (DMM 707.7.6). However, after six months,
5 such pieces would simply constitute non-subscriber "complimentary copies,"
6 so Heath is again mistaken in suggesting that the pieces "must be mailed" at
7 Outside-County rates.

8 • Advertising copies. Heath claims "Under DMM 707.7.3, these copies are
9 required to travel at the outside County postage rate as well." NNA-T-1 at 9,
10 lines 12-13. DMM 707.7.3 actually states "Copies paid for by advertisers or
11 others for advertising purposes are nonsubscriber or nonrequester copies...
12 Those copies are subject to the applicable rates for nonsubscriber or
13 nonrequester copies."

14 Thus, none of the non-subscriber copy issues raised by witness Heath
15 necessarily pose a problem for Within-County tally identification. As long as a
16 publisher is eligible to do so under DMM 707.11.3.3, it would have much the
17 same incentive to employ the markedly lower Within-County rates for non-
18 subscriber pieces as for subscriber pieces.

19 The practical issue is whether there is a significant volume of non-
20 subscriber copies exceeding the limitations that force the use of Outside-County
21 rates. Clearly, the potential problem is greater the more prevalent non-
22 subscriber copies exceeding the 10 percent limit are relative to the corresponding
23 Within-County volumes.

1 Witness Heath agrees that fewer nonsubscriber pieces exceeding the
2 allowance reduces the potential for misclassifying Within-County tallies in IOCS.
3 Tr. 29/9650. While witness Heath opines without proof that such pieces are not
4 measurable (response to NNA/USPS-T1-6(c); Tr. 29/9597), the Periodicals
5 mailing statement provides for the identification of nonsubscriber copies, and
6 separately identifies copies exceeding the 10 percent limit and thus ineligible for
7 Within-County rates. Thus, I obtained from PostalOne! the reported copies
8 exceeding the 10 percent limit, as well as the total Within-County copies, for the
9 titles included in the IOCS Within-County tally sample. The aggregate data are
10 reported in Table 1, below.

1 **Table 1. Nonsubscriber Copies Exceeding 10 Percent Threshold vs. Within-**
 2 **County Volumes: FY 2005 Within-County Tallies**

FY 2005 IOCS Titles in PostalOne!		
Within-County Copies	Nonsubscriber Copies Exceeding 10% Threshold	Nonsubscriber Copies Exceeding Threshold, % of Within-County
46,405,088	36,418	0.1%

3
 4 For the FY 2005 IOCS sample titles reported in the PostalOne! system,
 5 the number of copies subject to witness Heath's concerns is trivial, and so the
 6 likelihood of tally misidentification due to them is accordingly remote.

7 Witness Heath contends that mailers "reserve" their eligibility to mail
 8 pieces at the lower Within-County rates. However, he agrees that mailers who
 9 do not reach the limit would pay Within-County rates as applicable. Tr. 29/9648.
 10 Witness Siwek also states that mailers within the 10 percent limit would be able
 11 to claim Within-County rates for eligible nonsubscriber pieces. Tr. 29/9771. In
 12 fact, the data indicate that relatively few pieces are mailed under conditions
 13 where the mailer might be inclined to "reserve" the use of Within-County rates.
 14 For that matter, it would appear that if a mailer expected to exceed the threshold,
 15 its best strategy would be to employ Within-County rates up front to the extent
 16 allowed by regulation, to ensure that it fully employed the lower rates.

17 It may be noted, though, that a few titles (none of which appear in the FY
 18 2005 IOCS Within-County tally set) do individually report large fractions of non-
 19 subscriber copies exceeding the 10 percent limit relative to Within-County copies.
 20 If the need to do so is identified, it would be possible to identify such titles in the
 21 course of tally processing and to develop special procedures for classifying them
 22 to reduce the possibility of error.

1 **I.D. Other Critiques by Witnesses Heath and Siwek Do Not Point To**
2 **Substantial Errors.**

3 Witnesses Heath and Siwek raise other cases in which, they contend,
4 tallies of pieces actually paying Outside-County rates may be assigned Within-
5 County activity codes. These contentions lack practical substance, as I discuss
6 below.

7 **I.D.1. "Wandering Routes".**

8 Witness Heath's "Wandering Routes" issue represents a potential problem
9 similar to those discussed in Section I.C, above. While witness Heath's term
10 refers to delivery routes that may cross county boundaries, the underlying issue
11 is that the mapping between 5-digit ZIP Codes and counties used to determine
12 whether the delivery address is in the same county as the entry office is not
13 dispositive. Since the Within-County activity code assignment uses the "main"
14 county associated with the 5-digit ZIP Code, the process is subject to error if the
15 delivery address of an otherwise-eligible piece happens to be in a portion of the
16 ZIP Code outside the county of origin. Witness Heath, however, concedes that
17 the issue is likely to be "small" (NNA-T-1 at 8, line 2).

18 It is, in fact, possible to confirm that the "wandering routes" effect is small
19 by examining finer ZIP Code detail. While the 5-digit ZIP Code does not uniquely
20 identify counties, my understanding is the 9-digit ZIP Code identifies segments of
21 routes located entirely within one county. It is also my understanding that the 9-
22 digit ZIP Code is the addressing level at which Within-County rate eligibility is
23 determined by mailers for individual pieces. The prevalence of 9-digit ZIP Codes

1 outside the "main" county of the 5-digit ZIP Code provides a rough indication of
2 the extent of the "wandering routes" problem.

3 For the 180 unique five-digit ZIP Codes to which the pieces classified as
4 Within-County Periodicals in the FY 2005 IOCS sample were sent, there are
5 498,036 9-digit ZIP Codes, of which 490,532 (98.5 percent) correspond to the
6 "primary" county. Thus, if mail volumes and addresses were assumed uniformly
7 distributed over 9-digit ZIP Codes, the potential would be for a maximum 1.5
8 percent error, which confirms that the likely magnitude of the problem is small.

9 However, there is good reason to believe that the actual error is much
10 smaller than 1.5 percent. In densely populated areas, 5-digit ZIP Codes'
11 geographic extents are commonly entirely within county boundaries. It is also
12 common that population densities are relatively low near county boundaries—i.e.,
13 where towns and other municipalities are located in the interior of counties rather
14 than straddling the county line. Towns also tend to be less densely populated on
15 their outskirts. Thus, it is reasonable to assume that addresses are not uniformly
16 distributed over the "wandering" and "non-wandering" portions of delivery routes,
17 such that addresses will be concentrated in the 9-digit ZIP Codes associated with
18 the primary county.

19 The "wandering routes" issue is amenable to longer-term solution. My
20 understanding is that witness Heath had discussed possibilities for resolving the
21 issue in the future, such as by obtaining images on the mailpiece or employing
22 other markings. (Tr. 29/9658.) It would appear that the issue could be solved by
23 collecting the nine-digit ZIP Code for Periodicals pieces sampled in IOCS. Given

1 that this is the level at which the geographic criterion for Within-County rate
2 eligibility is determined, doing so would eliminate the county-assignment
3 ambiguity in the current methods based on the 5-digit ZIP Code. My
4 understanding is that the Postal Service intends to modify the IOCS data
5 collection instrument accordingly. In the meanwhile, the likely effect appears
6 quite small.

7 **I.D.2. Use of Information in Publication Directories.**

8 Witness Siwek claims that circulation information obtained by the Postal
9 Service for publications lacking PostalOne! mailing statement data are
10 insufficiently timely (NNA-T-3 at 7, lines 3-13). This criticism assumes that
11 affected publications' circulations experience substantial short-term variation.

12 The general procedure in the edit process is to use the most recent
13 available directories. Since the directory publication dates are close to the IOCS
14 production deadlines, it sometimes is not possible to employ the current year's
15 directory. Insofar as witness Siwek admits to having no more current sources for
16 circulation information (response to NNA/USPS-T3-9(c), Tr. 29/9678; Tr.
17 29/9747), the question amounts to whether the most recent available information
18 is recent enough.

19 Witness Siwek overstates his case for the vintage of the circulation
20 information. He specifically cites the use of the 139th (2004) edition of the Gale
21 Directory of Publications, published in September, 2004, claiming it "at best
22 contained circulation data for 2003," implying that the data may be two years out-

1 of-date. (NNA-T-3 at 7, line 9.) Witness Siwek appears to confuse calendar and
2 fiscal years in the course of his discussion.

3 I learned from Thomson Gale staff that requests for updated information
4 are sent approximately November 1 of the year prior to the edition data, and the
5 deadline for updated information is approximately May 1 of the edition's year of
6 publication. In the case of Gale's 139th edition, this period is within FY 2004
7 (beginning October 1, 2003), so the Gale information is not as old as witness
8 Siwek implies. Witness Siwek's critique collapses in the case of the Bowker's
9 News Media Directory, since calendar year 2004 data are not obviously
10 inapplicable to FY 2005 (beginning October 1, 2004).

11 The most important practical question is whether the availability of more
12 recent circulation data would affect the assignments of affected tallies. Contrary
13 to witness Siwek's assertion in response to NNA/USPS-T3-9 (Tr. 29/9678), it is
14 straightforward to check the extent to which reported circulation figures vary over
15 time. As shown in Table 2, below, few titles show any material variation in the
16 circulation of the titles subject to directory checks over the last several years.
17 The exception, the Gonzales Tribune, is discussed below. This result should not
18 be surprising, as it would stand to reason that publications with small circulations
19 limited by local appeal or esoteric subject matter would not normally experience
20 wide swings in circulation. Further, publications with primarily local appeal are
21 unlikely to experience frequent changes in eligibility for Within-County rates.
22 Accordingly, the critique has no practical substance.

1

Table 2. Variations in Reported Circulation for FY 2005 Titles

Publication	Year				
	2002	2003	2004	2005	2006
ONE VOICE	19,200 /6	19,500 /7	19,500 /8	19,500 /9	19,500 /10
ARKANSAS BANKER	2,000 /1	2,000 /2	2,000 /3	2,000 /4	2,000 /5
FORT BRAGG ADVOCATE- NEWS	5,400 /1	5,400 /2	5,400 /3	5,400 /4	5,400 /5
GONZALES TRIBUNE	840 /6	840 /7	840 /8	13,000 /11	13,000 /12
CALAVERAS ENTERPRISES	5,300 /1	5,300 /2	5,300 /3	5,800 /4	5,800 /5
THE NEW LONDON JOURNAL	1,092 /1	1,092 /2	1,092 /3	1,092 /4	N/A
CLYDE REPUBLICAN	1,000 /1	1,000 /2	1,000 /3	1,000 /4	1,000 /5
SOUTHWEST DAILY TIMES	6,829 /1	6,829 /2	6,829 /3	6,829 /4	6,829 /5
TONGANOXIE MIRROR	2,500 /1	2,500 /2	2,500 /3	2,500 /4	2,500 /5
TRI COUNTY NEWS	1,375 /1	1,375 /2	1,375 /3	1,375 /4	1,375 /5
LAKE CITY GRAPHIC	3,200 /1	3,200 /2	3,200 /3	3,200 /4	3,200 /5
LICKING NEWS	2,500 /1	2,500 /2	2,500 /3	2,500 /4	2,500 /5
POST TELEGRAPH	2,670 /1	2,670 /2	2,670 /3	2,670 /4	2,670 /5
SMITHVILLE LAKE HERALD (THE)	2,600 /1	2,600 /2	2,600 /3	2,600 /4	2,600 /5
THE FRANKLIN PRESS	9,200 /1	9,200 /2	9,200 /3	9,200 /4	9,200 /5
THE ALAMANCE NEWS	6,065 /1	6,065 /2	6,065 /3	6,065 /4	7,100 /12
DODGE CRITERION	1,100 /1	1,100 /2	1,051 /3	1,051 /4	1,051 /5
AMITYVILLE RECORD	2,850 /1	2,850 /2	2,850 /3	2,850 /4	2,850 /5
THE JEWISH WEEK	110,000 /6	110,000 /7	110,000 /8	90,000 /9	90,000 /10
BALDWIN HERALD	4,600 /6	5,500 /7	5,500 /8	5,500 /9	5,500 /10

Revised December 4, 2006

Table 2, Cont'd	Year				
Publication	2002	2003	2004	2005	2006
SAVOY	200,000 /1	200,000 /2	325,000 /3	325,000 /4	325,000 /5
BURNS TIME HERALD	3,000 /1	3,000 /2	3,000 /3	3,000 /4	3,000 /5
DRAIN ENTERPRISE	1,300 /1	1,300 /2	1,300 /3	1,300 /4	1,300 /5
CHERAW CHRONICLE	6,724 /1	8,050 /2	8,050 /3	8,050 /4	8,050 /5
THE PRESS AND STANDARD	7,000 /1	7,000 /2	7,000 /3	7,000 /4	6,500 /12
GAZETTE	8,800 /1	8,800 /2	8,800 /3	8,800 /4	8,800 /5
CHILTON TIMES JOURNAL	5,400 /1	5,400 /2	5,400 /3	4,500 /4	4,500 /5
RICHLAND OBSERVER	4,000 /1	4,000 /2	4,000 /3	4,000 /4	4,000 /5

Notes

1/ *Gale Directory of Publications 136th Edition (2002)*2/ *Gale Directory of Publications 137th Edition (2003)*3/ *Gale Directory of Publications 139th Edition (2004)*4/ *Gale Directory of Publications 140th Edition (2005)*5/ *Gale Directory of Publications 141st Edition (2006)*6/ *Bowker's News Media Directory 52nd Edition (1) 2002*7/ *Bowker's News Media Directory 53rd Edition (1) 2003*8/ *Bowker's News Media Directory 54th Edition (1) 2004*9/ *Bowker's News Media Directory 55th Edition (1) 2005*10/ *Bowker's News Media Directory 56th Edition (1) 2006*11/ *Ulrich's Periodicals Directory 44th Edition (2006)*12/ *Ulrich's Periodicals Directory Online Edition, www.ulrichsweb.com*

1 I.D.3. "Local Appeal" Determination.

2 Witness Siwek objects to the classification of the tally for the Gonzales
3 Tribune as Within-County based on the assumed local appeal of the publication
4 (NNA-T-3 at 9, lines 14-21), though he does not specifically claim that it actually
5 was ineligible or otherwise did not claim Within-County rates (response to
6 USPS/NNA-T3-13(a); Tr. 29/9682).

7 The "local appeal" criterion is rarely used, since most publications
8 requiring circulation lookups report circulations under the 10,000 copy limit. In

1 the case of the Gonzales Tribune, the circulation lookup showed this title's
2 circulation to be 13,000, but also identified it as a community newspaper. This
3 suggests that the circulation was likely to be geographically limited. The
4 masthead graphic on the paper's web site (<http://www.kingcityrustler.com/>,
5 accessed October 17, 2006) indicates the Gonzales Tribune and affiliated
6 publications as specifically "Serving South Monterey County since 1901." Thus,
7 we considered it reasonable to assume that the Gonzales Tribune's circulation
8 was likely concentrated in Monterey County, California sufficiently to permit it to
9 mail at Within-County rates.

10 I directed a member of my staff to call the Gonzales, CA post office to
11 verify whether the Gonzales Tribune does in fact routinely employ Within-County
12 rates. The postmaster reported that it does. Thus, the tally appears to have
13 been classified correctly.

14 **I.D.4. Reuse of Previous Hand-check Results.**

15 Witness Siwek also objects to the classification of the tallies based on the
16 outcome of previous years' checks (NNA-T-3 at 9, lines 5-9). As with other
17 criticisms discussed above, witness Siwek offers no evidence that the affected
18 tallies were misclassified (response to USPS/NNA-T3-12(b); Tr. 29/9681).

19 It should be noted that this criterion only applies to tallies where it is not
20 possible to link PostalOne! mailing statement data—37 tallies were subject to it in
21 FY 2005 (USPS-LR-L-9; Appendix D; workbook 'hand2005.xls'; worksheet
22 'Further Checks (2)'). This practice was adopted on the basis of our experience

1 over the course of our work that the underlying data change very slowly for
2 affected tallies; this is borne out by Table 2, above. In addition, the tallies subject
3 to this criterion were re-checked using current sources, and the current data did
4 not overturn the previous classifications in any instance. Again, there is no
5 indication that the Postal Service method ignores material dispositive data.

6 **I.E. Conclusion: Within-County Tally Identifications are Reliable.**

7 NNA witnesses Heath's and Siwek's critiques of the Within-County tally
8 identification process rest on the assertion that a significant number of
9 Periodicals tallies might appear to be eligible for Within-County rates but actually
10 pay Outside-County rates. However, quantification of the factors identified by
11 witnesses Heath and Siwek shows the effects to be *de minimis*. Contrary to
12 witness Siwek's claim that there is "no cost data" for Within-County Periodicals
13 (NNA-T-3 at 10), the Postal Service makes good use of the available data to
14 identify Within-County Periodicals, and should be able to eliminate the main
15 remaining source of potential error with incremental modifications to its current
16 procedures. In the absence of demonstrated tally identification error, the
17 additional cost remedies recommended by witness Siwek are grossly
18 inappropriate (see Section II, below).

1 **II. Witness Siwek's Pooling Proposal is Inappropriate and Likely to Strongly**
2 **Bias Within-County Periodicals Costs.**

3 **II.A. The Sampling Standard Errors of Within-County Periodicals Costs Are**
4 **Reasonable Given the IOCS Sample Size and Within-County Cost Shares.**

5 Witness Siwek claims that the cost estimates for Within-County
6 Periodicals exhibit CVs "well beyond acceptable levels," citing a sampling
7 textbook for support. (NNA-T-3 at 16, lines 15-19.) Witness Siwek badly
8 misinterprets his source, however, and his conclusion is therefore incorrect.

9 Witness Siwek quotes a textbook by Prof. Sharon Lohr as indicating that
10 "For many surveys of people in which a proportion is measured, $e = 0.03$ [the
11 margin of error, or MOE] and $\alpha = 0.05$ [the significance level associated with the
12 margin of error]." (*Id.*, footnote 33). This is true enough, but a significant detail
13 witness Siwek omits is that in most such surveys, the proportions being
14 measured are relatively large, as in political opinion surveys in which the
15 proportion (supporters of candidate X) is often close to 0.5. If the survey
16 estimate is 0.5, and the sampling MOE is 0.03, then the coefficient of variation
17 (CV) is about 3 percent. If the estimated proportion is 0.34, again with a 3
18 percentage point MOE, the CV is approximately 4.5 percent.

19 I did not pick the example of the 0.34 proportion by accident. It is the
20 proportion of mail processing volume-variable costs (VVC), using the Postal
21 Service method, for single-piece First-Class Mail in Dr. Czigler's table of mail
22 processing CVs (USPS-T-1 at 14). Note that the *actual* IOCS CV is 0.64
23 percent. In fact, the relative MOEs of the IOCS-based mail processing costs are
24 under two percent for the two largest subclass categories (Standard Regular is

1 the next largest category, representing 23 percent of VVC; *Id.*). Given the
2 proportions of the subclass costs, IOCS easily exceeds the "standard" cited by
3 witness Siwek.

4 Within-County Periodicals is indisputably a small subclass, representing
5 less than 0.2 percent of mail processing VVC and 0.3 percent of the CARMM
6 VVC for Cost Segment 6.1. (*Id.* at 15.) Nevertheless, the CVs on the Within-
7 County Periodicals costs for C/S 3.1 and C/S 6.1 are, respectively, 11.58 percent
8 and 11.66 percent. A survey with a three percentage point margin of error could
9 only yield CVs of those magnitudes for much larger proportions—approximately
10 13 percent or more. Again, IOCS actually performs better than the "standard" set
11 by witness Siwek.

12 **II.B. Witness Siwek's Analysis of BY 2004 and BY 2005 Confidence**
13 **Intervals Actually Shows That Pooling Is Inappropriate.**

14 As a prelude to his recommendation to pool BY 2004 and BY 2005 Within-
15 County Periodicals costs, witness Siwek shows that the BY 2005 cost estimate
16 falls outside the 95 percent confidence interval for the BY 2004 costs. (NNA-T-3
17 at 12.) Reducing the sampling variation in the IOCS estimates would only serve
18 to reinforce that result.

19 Given that the BY 2005 Within-County cost estimate clearly falls outside
20 the confidence interval for the BY 2004 estimates, witness Siwek should
21 conclude that the differences in the results do not represent differences due to
22 sampling error, and that the FY 2004 and FY 2005 IOCS samples are drawn
23 from different populations. Indeed, witness Siwek seems to be searching for a

1 "known extraordinary event" (Id. at 4, line 2) that would explain the results, and
2 fails to consider the redesign of the IOCS data collection instrument (response to
3 USPS/NNA-T3-1; Tr. 29/9668). While witness Siwek apparently was looking for
4 operational changes, the measurement methodology cannot be neglected.

5 Witness Siwek agrees that it is not appropriate to pool data from two
6 distinct populations when they are significantly different. (Response to
7 USPS/NNA-T3-17; Tr. 29/9685.) Since BY 2005 costs are significantly higher
8 than BY 2004, he should also agree that it is not appropriate to pool these two
9 years' data.

10 The evidence, as stated in my direct testimony (USPS-T-46 at 35), is that
11 the FY 2005 IOCS questionnaire is better able to identify relatively obscure
12 Periodicals titles, including (though not limited to) Within-County Periodicals.
13 While the pre-testing of the FY 2005 IOCS questionnaire could not provide
14 sufficient granularity to identify error rates for Within-County Periodicals, it did
15 show that none of the sampled non-Periodicals pieces were misidentified as
16 Periodicals. In short, there is no evidence of errors that would unjustifiably
17 increase Periodicals costs on the data collection end of the IOCS process in BY
18 2005.²

19 Since Section I, above, demonstrates the absence of statistically or
20 qualitatively significant error in the Periodicals subclass assignment process, the
21 appropriate conclusion is that Within-County Periodicals costs have previously

² Notwithstanding the lack of testing specific to Within-County Periodicals to which witness Siwek objects, the IOCS design changes involved much more extensive testing than the FY/BY 2004 data he seeks to re-introduce.

1 been understated. Accordingly, pooling the BY 2004 and BY 2005 costs would
2 also understate Within-County Periodicals costs, thus introducing an
3 inappropriate bias.

4 **II.C. Witness Siwek's Pooling Approach is Not a Proper Application of**
5 **Sequential Sampling.**

6 Witness Siwek describes his pooling methodology as an application of
7 "sequential sampling." (NNA-T-3 at 17 lines 7-11.) However, in common
8 statistical usage, sequential sampling employs a relatively small sample to obtain
9 a preliminary estimate of a quantity of interest (e.g., an unknown proportion
10 sought by a survey). The preliminary estimate is then used to determine the
11 sample size needed to obtain a desired MOE for the result. However, witness
12 Siwek shows no interest in using a sequential sample to inform a subsequent
13 sampling plan. He does not state a desired MOE for Within-County Periodicals,
14 other than that which the IOCS estimate already improves upon, as discussed in
15 Section II.A, above. He does not use the BY 2004 data to propose a new sample
16 size that would be appropriate for estimating costs for Within-County Periodicals
17 (response to USPS/NNA-T3-16). His analysis, discussed above, shows that BY
18 2004 and BY 2005 have significantly different estimated costs, which would also
19 preclude the use of sequential sampling. Given these omissions, it appears that
20 witness Siwek is primarily interested in pooling cost data from BY 2004 together
21 with BY 2005 simply to reduce the estimated unit cost, rather than using a true
22 sequential sampling method for its usual purpose.

1 **II.D. Witness Siwek's Pooling Approach Yields Biased Unit Costs and is**
2 **Inappropriate.**

3 Witness Siwek agrees that "[i]deally FY2005 estimated costs should
4 reflect the FY2005 population of mail processed by FY2005 Postal Service
5 operations." (Response to USPS/NNA-T3-17(b), Tr. 29/9685). His arguments
6 that data from multiple years should be pooled together, addressed above, are
7 inadequate to overturn this general principle. Indeed, witness Siwek's own
8 analysis, properly interpreted, shows that the BY 2004 IOCS data are not
9 estimating the same quantities as the improved BY 2005 IOCS data. Therefore it
10 is inappropriate to use BY 2004 data when estimating costs for BY 2005.

11 **III. Conclusion**

12 The standards set by the NNA witnesses for identification of Within-
13 County Periodicals costs amount to a catch-22 for the Postal Service. On the
14 one hand, witness Heath is appreciative that mailers are not required to place
15 markings on pieces that claim Within-County rates. (NNA-T-1 at 9.) Witness
16 Siwek then claims that the Postal Service has no legitimate cost data for Within-
17 County Periodicals, in large part because the unambiguous observable rate
18 markings that the mailers do not want to apply are not present.

19 In fact, the incentive to claim the Within-County rates whenever possible is
20 strong enough to provide a reliable basis for the inferences made in the Postal
21 Service tally edit procedures. The procedures make use of mailing statement
22 data wherever possible to identify actual use of Within-County rates by mailers,
23 and reasonable criteria for the minority of tallies that cannot be linked to mailing

1 statement data. The potential problems identified by the NNA witnesses are
2 minor, and the most significant issue, the "wandering routes" problem, is solvable
3 with minor changes to the IOCS data collection instrument.

4 NNA's concern with the increase in measured Within-County Periodicals
5 costs from BY 2004 to BY 2005 is understandable, but their proposed remedy is
6 not. The small size of the Within-County subclass precluded specific testing of
7 that subclass. Nevertheless, the redesigned IOCS instrument has been tested
8 far more extensively than its predecessor, and the testing has shown it to be
9 more accurate. In recommending multi-year pooling of cost data, witness Siwek
10 is asking for relief from costing errors he has not demonstrated exist, from a
11 costing system he has not demonstrated is inaccurate. Since the tally edit
12 processes have not changed, pooling the IOCS data does not even specifically
13 address the alleged problems, insignificant as they may be. Therefore, the
14 Commission should continue to employ the accepted method for identifying
15 Within-County Periodicals costs in IOCS.

1 CHAIRMAN OMAS: This brings us to oral
2 cross-examination.

3 There has been one request for oral cross.
4 Ms. Rush, would you introduce yourself and who you
5 represent and begin?

6 MS. RUSH: Yes, Mr. Chairman. Thank you.
7 I'm Tonda Rush with the National Newspaper
8 Association.

9 I offer an apology to the Commission and
10 also to the witness for his inconvenience. While we
11 were in transit this morning, the police closed down
12 17th and 18th Streets and left us in the gridlock
13 Washington is sometimes known for, so I apologize that
14 you were delayed.

15 CROSS-EXAMINATION

16 BY MS. RUSH:

17 Q Do you prefer to be called Mr. Bozzo or Dr.
18 Bozzo, sir?

19 A I respond to either.

20 Q Either one? All right. Thank you. Would
21 you turn to page 14, please, in your testimony?

22 A I have it.

23 Q This section discusses your response to NNA
24 Witness Siwek's criticisms of what he saw as some
25 weaknesses in the identification of IOCS tallies.

1 You say at the very end of that page there,
2 as you've explained, that you would expect
3 circulations to be stable; that the results in most of
4 the publications you examined would not normally
5 experience wide swings in circulation and typically
6 publications with primarily local appeal are unlikely
7 to experience frequent changes in eligibility.

8 Your testimony I believe is a predicate to
9 the revised Table 2. Is that correct?

10 A That's correct, although I don't think your
11 summary is entirely correct.

12 In particular, I would want to clarify that
13 the testimony on page 14 describes not volume changes
14 as such or circulation changes for the titles, but
15 rather circulation changes that are actually material
16 to the determination of in-county rate eligibility.

17 Q All right. With that understanding then,
18 let me ask you first. Have you examined the RPW data
19 with respect to volumes and Within County?

20 A I have inspected certain RPW data for it.

21 Q Are you aware of the nature of the volumes
22 reported out by the stratified sample that produces
23 some amount of Within County volume data?

24 A I have seen a response of Witness Pafford
25 that identifies the fraction of pieces in RPW coming

1 out of PostalOne! data versus the bulk RPW sample
2 data. That's about the extent of my familiarity.

3 Q All right. Do you have any understanding of
4 the volatility of the volume data reported out of the
5 stratified sample?

6 A I do not.

7 Q Okay. Let's move then please to your Table
8 2. I believe I'm understanding the corrections in the
9 errata that were filed here.

10 We were looking at the *Gonzales Tribune*, I
11 believe, in one of the errata changes. This
12 periodical it appears reports in year 2004
13 circulations of 840, and by the following year the
14 circulations have leapt to 13,000. Is that correct?

15 A That was what was reported in the directory.

16 Q All right. Have you used the same
17 directories in validating the circulations for those
18 two years?

19 A When you say the same directories, do you
20 mean for all titles?

21 Q No. For this particular title, the *Gonzales*
22 *Tribune*. If I understand the correction here, you're
23 footnoting to *Balker's News Media Directory*, 54th
24 Edition, for 2004 and then the *Ulrich's Periodicals*
25 *Directory*. Is that correct?

1 A That's correct, so in response to your
2 question the 2002 through 2004 and then the 2005 and
3 2006 circulation figures are from different
4 directories.

5 Q And why did you switch?

6 A Sometimes titles cannot be located in one
7 directory so we consult several in order to attempt to
8 locate information for as many titles as we can.

9 Q Did you not find that publication listed in
10 the *Balker's* for 2006 then?

11 A Apparently not.

12 Q Do you have the pages with you from the
13 *Ulrich's Directory* for the 2005 and 2006 data by any
14 chance?

15 A Yes, I do.

16 Q Could you examine those and tell me whether
17 the source tells you any explanation for this wide
18 swing in circulation?

19 A It provides no explanation of the change,
20 although of course it should be noted that I would not
21 expect the one directory to consult other directories
22 in such things. The directories themselves simply
23 publish a circulation figure that is reported by the
24 publications themselves.

25 With respect to the *Gonzales Tribune* in

1 particular, after seeing the written questions that
2 NNA provided we came to the conclusion that the 13,000
3 figure is likely some sort of typographical or data
4 entry error in the *Ulrich's Directory*; that the
5 circulation figure closer to 800 that was reported in
6 previous years is likely correct.

7 Obviously that would tend to support the
8 finding that we made originally and verified
9 subsequently that the *Gonzales Tribune* was very likely
10 to be eligible for Within County rates.

11 Q You said in your testimony that you had had
12 your staff call the Gonzales Post Office to verify
13 that it did have Within County volumes.

14 A That's correct.

15 Q Did you ask whether the newspaper or the
16 periodical had been audited to verify those volumes?

17 A No.

18 Q All right. Thank you. On Table 2 you've
19 listed this collection of periodicals that you said
20 had material variations. Are all of these periodicals
21 ones that --

22 A I'm sorry. I said they had no material
23 variation.

24 Q Sorry. That had no material variations.
25 Correct. Are all these periodicals ones that reported

1 PostalOne! volumes?

2 A None of them are ones that reported
3 PostalOne! volumes.

4 Q These are all ones that volumes came from
5 other sources, but you couldn't find the source?

6 A Well, they're specifically titles for which
7 we could not locate PostalOne! data and thus had to
8 consult other sources to make an eligibility
9 determination.

10 Q Do you infer from that that there were no
11 PostalOne! data?

12 A I would make that inference, yes.

13 Q Would you infer that they came then from the
14 RPW samples?

15 A Well, this is asking me about the universe
16 of the bulk RPW sample, which I'm not particularly
17 familiar with.

18 I would assume that the titles were eligible
19 for sampling in principle and bulk RPW, but whether
20 they were actually sampled I could not say.

21 Q You have some other periodicals on this list
22 that are showing some fairly significant differences
23 in circulation. If you'd look at the Savoy, if you
24 would please, which should be the top of page 16?

25 That shows a circulation increase from year-

1 to-year of about 60 some percent, is that correct,
2 between 2003 and 2004?

3 A It's correct, but this would be an example
4 of a change which while it is undoubtedly significant
5 for the publishers of the Savoy is irrelevant for the
6 purposes of identifying the title as Within County or
7 Outside County.

8 The circulation is above 10,000, so I
9 believe the resolution of this title was that it was
10 coded as Outside County periodicals.

11 Q The Savoy is of interest because the
12 circulation is so large. Now, do you agree that the
13 two ways a periodical can qualify for Within County
14 rates are to have circulation under 10,000 or to be
15 distributed primarily within the county of
16 publication?

17 A I agree.

18 Q How did you verify that the Savoy's
19 eligibility derived from the second of those two
20 criteria?

21 A As I said, my recollection is that the Savoy
22 was actually classified as Outside County. This
23 listed all of the titles that we checked, not all the
24 titles that ended up as Within County.

25 Q So ultimately this has not been validated as

1 an in-county IOCS tally, the *Savoy*?

2 A Correct.

3 Q All right. Thank you. Would you turn to
4 page 3?

5 A I have it.

6 Q Beginning at line 15 you say, "In the next
7 stage, the periodicals tallies resulting from the
8 mainframe processing are linked with mailing statement
9 data from the PostalOne! system where possible."

10 Do you use the term linked in the
11 spreadsheet sense? Is there actually a cell that's
12 linked with another cell in the spreadsheet somewhere?
13 What do you mean by linked there, please?

14 A I mean linked in that there is a processing
15 of the PostalOne! data that matches publication
16 numbers or ISSNs from the IOCS tallies to the
17 publication numbers or ISSNs in the PostalOne!
18 records. The link is there.

19 I believe that some linked PostalOne! data
20 are reported in the USPS-LR-L-9 file that's referenced
21 in the testimony called hand2005.xls, but I believe
22 the link is done in other processing and not as a
23 spreadsheet match.

24 Q Okay.

25 A But in a nutshell there is a common field in

1 the IOCS and the PostalOne! data that's used to match
2 up the two data sets.

3 Q So linkage is conceptual here in a sense and
4 not necessarily an actual cell that's linked to
5 another cell as you've looked at the data? Am I
6 understanding you correctly?

7 A The actual processing is done with other
8 software.

9 Q All right. You say further down here that
10 83 percent of the tallies with final Within County
11 activity codes are resolved by determining whether the
12 mailer entered any copies at the Within County rates.

13 Are you able to provide us with the
14 numerator and the denominator for that 83 percent?

15 A The denominator is the 193 tallies that's
16 been referenced I think by Dr. Czigler, if not myself.
17 The numerator, I don't have that off the top of my
18 fingers, but it would be the 160 to 165 tallies that
19 would round you to 83 percent of 193.

20 Again, you could refer to this hand2005.xls
21 file and count up the tallies where the reason for the
22 classification was given as the presence of Within
23 County PostalOne! volumes.

24 Q So to be clear on the meaning of this
25 particular statement, what you're telling us here is

1 that when you have the tally you're trying to validate
2 that it is in fact a Within County tally, and you do
3 that by determining whether there were any copies
4 entered at Within County rates at that time?

5 A Basically correct. We roll up the
6 PostalOne! volumes by title and match the volumes by
7 title to the IOCS tally records.

8 Q And that would not necessarily tell you that
9 that particular piece was a Within County piece, but
10 then you follow with a series of inferences that it is
11 likely to be if there are volumes present. Is that
12 correct?

13 A That's correct.

14 Q Would you turn to page 20, please?

15 A I have it.

16 Q On lines 8 and 9 you say a survey with a
17 three percentage point margin of error could only
18 yield CVs of those magnitudes, referring to the
19 magnitudes of Cost Segments 3.1 and 6.1, for much
20 larger proportions, approximately 13 percent or more.

21 Can you explain what you mean by survey in
22 that context?

23 A Well, I'm referring to survey in the general
24 sense of a sampling study with a three percentage
25 point margin of error as Witness Siwek introduced in

1 his testimony, which is referenced on page 19.

2 If a sampling study has a particular margin
3 of error given the percentage points, what that means,
4 among other things, is that the sample size has to
5 become very large if it's going to resolve response
6 categories that are very small proportions of the
7 responses.

8 In the context of opinion surveys, which I
9 think is the context of the material that Mr. Siwek
10 cited, say a political opinion poll, it's not uncommon
11 for the question to be do you support Candidate A or
12 Candidate B, in which case the proportions are pretty
13 close to half. You can attain a margin of error of a
14 few percentage points by surveying only 1,000 or 2,000
15 people out of enormous populations like the number of
16 voters in the United States.

17 In this case Within County periodicals is
18 undisputedly a small volume and cost category, and
19 IOCS can produce better sampling variability than the
20 target Mr. Siwek suggests given the very small size of
21 Within County costs because it takes a very large
22 sample by the standards of many sample surveys.

23 Q Is that another way of saying that the only
24 way to improve the reliability of the data and to
25 shrink these CVs is to have much larger samples of all

1 mail classes? Is that what you're saying?

2 A Yes, and I believe Dr. Czigler had said the
3 same thing during his appearance.

4 In some cases you could, and IOCS in fact
5 does oversample certain types of activities because it
6 could be expected that that will allow more precise or
7 I should say allow estimates to be developed with
8 lower sampling variabilities without dramatically
9 increasing the cost of the entire IOCS system.

10 In this case I don't think Within County
11 periodicals really affords a similar opportunity
12 simply because the Within County volumes are
13 distributed over such a large number of post offices,
14 so I think that in order to get lower sampling CVs you
15 need a much bigger sample from IOCS as a whole with
16 the attendant costs.

17 Q So there's no practical way to oversample
18 Within County volumes?

19 A I don't believe so. Certainly not without a
20 significant increase in the cost for the system as a
21 whole.

22 Q When I asked Dr. Czigler this question I
23 asked him whether the Within County mailers are
24 basically stuck with less reliable data because
25 they're so small, and he said basically pretty much.

1 Do you agree with that?

2 A I wouldn't necessarily agree with stuck with
3 less reliable data. You've got data that has higher
4 sampling error because you're --

5 Q Isn't that less reliable data?

6 A In one sense.

7 Q Okay. On page 21, if you'll flip over to
8 lines 7 to 9?

9 A I have it.

10 Q Your statement is here Witness Siwek agrees
11 it's not appropriate to pool data from two distinct
12 populations when they're significantly different, and
13 then you say because the base year 2005 costs are
14 significantly higher than base year 2004 he should
15 also agree it's not appropriate to pool these two
16 years of data.

17 The 2005 costs that you're referring to here
18 are the 2005 cost estimates that are produced by the
19 revised IOCS instrument, correct?

20 A That's correct.

21 MS. RUSH: I have nothing further. Thank
22 you.

23 CHAIRMAN OMAS: Thank you, Ms. Rush.

24 Is there anyone else who wishes to cross-
25 examine Witness Bozzo?

1 (No response.)

2 CHAIRMAN OMAS: Are there any questions from
3 the bench?

4 (No response.)

5 CHAIRMAN OMAS: Mr. Hollies, would you like
6 some time with your witness?

7 MR. HOLLIES: Yes. Could I have five
8 minutes?

9 CHAIRMAN OMAS: By all means. Five minutes.
10 We will come back at the top of the hour, I promise.

11 (Whereupon, a short recess was taken.)

12 CHAIRMAN OMAS: Mr. Hollies?

13 MR. HOLLIES: The Postal Service has no
14 redirect for Dr. Bozzo.

15 CHAIRMAN OMAS: Thank you, Mr. Hollies.

16 Mr. Bozzo, that completes your appearance
17 here today and your testimony. We appreciate your
18 testimony and your contribution to our record. You
19 are now excused.

20 (Witness excused.)

21 CHAIRMAN OMAS: Mr. Levy?

22 MR. LEVY: Mr. Chairman, Magazine Publishers
23 of America and a coalition of other periodical
24 intervenors call Dr. Stuart Elliott.

25 CHAIRMAN OMAS: Mr. Elliott, would you

1 please rise?

2 Whereupon,

3 STUART W. ELLIOTT

4 having been duly sworn, was called as a
5 witness and was examined and testified as follows:

6 CHAIRMAN OMAS: Before you begin, Mr. Levy,
7 I'd like to thank you for your cooperation. We had,
8 as you all know, a threat at the White House this
9 morning. Ms. Rush was a little late, so we had to
10 juggle the schedule. We appreciate your
11 understanding.

12 MR. LEVY: No problem. The streaming audio
13 really makes it a lot easier. I can't get it because
14 my firm's software blocks it and treats it as spam,
15 but consultants have better systems so they can tell
16 me what's going on.

17 CHAIRMAN OMAS: Well, thank you for your
18 understanding, and you may proceed.

19 MR. LEVY: Thank you.

20 (The document referred to was
21 marked for identification as
22 Exhibit No. MPA et al.-RT-2.)

23 DIRECT EXAMINATION

24 BY MR. LEVY:

25 Q Do you have before you two copies of a

Heritage Reporting Corporation
(202) 628-4888

1 document marked MPA et al.-RT-2?

2 A Yes, I do.

3 Q Have you had a chance to review both copies?

4 A Yes, I have.

5 Q They were prepared by you or under your
6 supervision?

7 A Yes, they were.

8 Q And those are in fact your rebuttal
9 testimony on behalf of MPA, ANM, ABM, Dow Jones,
10 McGraw-Hill and NNA?

11 A That's correct.

12 Q If you were to testify orally on the same
13 subjects would your testimony be the same?

14 A Yes, it would.

15 Q Do you have any corrections to make?

16 A No, I do not.

17 Q Do you adopt MPA et al.-RT-2 as your
18 testimony?

19 A Yes.

20 MR. LEVY: With that, Mr. Chairman, I'm
21 going to approach the witness, take the two copies and
22 give them to the reporter and ask that they be
23 admitted into evidence.

24 CHAIRMAN OMAS: Is there any objection?

25 (No response.)

1 CHAIRMAN OMAS: Hearing none, I will direct
2 counsel to provide the reporter with two copies of the
3 corrected testimony of Stuart W. Elliott.

4 That testimony is received into evidence and
5 is to be transcribed into the record.

6 (The document referred to,
7 previously identified as
8 Exhibit No. MPA et al.-RT-2,
9 was received in evidence.)

10 //

11 //

12 //

13 //

14 //

15 //

16 //

17 //

18 //

19 //

20 //

21 //

22 //

23 //

24 //

25 //

Postal Rate Commission
Submitted 11/20/2006 3:06 pm
Filing ID: 55042
Accepted 11/20/2006

MPA et al.-RT-2

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001

Postal Rate and Fee Changes,
2006

)
)

Docket No. R2006-1

**REBUTTAL TESTIMONY OF STUART W. ELLIOTT
ON BEHALF OF
MAGAZINE PUBLISHERS OF AMERICA, INC.,
ALLIANCE OF NONPROFIT MAILERS,
AMERICAN BUSINESS MEDIA,
DOW JONES & CO.,
THE MCGRAW-HILL COMPANIES, INC.,
AND NATIONAL NEWSPAPER ASSOCIATION**

Please address questions about this
testimony to:

David M. Levy
Richard E. Young
SIDLEY AUSTIN LLP
1501 K Street, N.W.
Washington, DC 20005-1401
(202) 736-8000

*Counsel for Magazine Publishers of
America, Inc., and Alliance of Nonprofit
Mailers*

November 20, 2006

TABLE OF CONTENTS

	Page
I. INTRODUCTION AND SUMMARY	1
A. Autobiographical Sketch	1
B. Purpose of testimony	1
II. IN THE CURRENT CASE, THE POSTAL SERVICE HAS PROVIDED A RESPONSE TO THE COMMISSION'S REQUEST IN DOCKET NO. R2000-1 FOR MORE EMPIRICAL INFORMATION ON SETUP AND TAKEDOWN TIME IN OPERATIONS.	2
III. IMPROVED INFORMATION ABOUT MAIL PROCESSING OPERATIONS ON THE RECORD CAN BE USED TO AUGMENT THE COMMISSION'S METHOD OF ESTIMATING THE VOLUME VARIABILITY OF MAIL PROCESSING TO REFLECT SETUP AND TAKEDOWN TIME.....	4
IV. AN AUGMENTED VERSION OF THE COMMISSION'S APPROACH TO ESTIMATING THE VARIABILITY OF MAIL PROCESSING THAT REFLECTS SETUP AND TAKEDOWN TIME SHOWS THAT WITNESS NEELS' ECONOMETRIC ESTIMATES OF VOLUME VARIABILITY AREN'T CONSISTENT WITH OPERATIONAL REALITIES IN MAIL PROCESSING.	7
V. AN AUGMENTED VERSION OF THE COMMISSION'S APPROACH TO ESTIMATING THE VARIABILITY OF MAIL PROCESSING THAT REFLECTS SETUP AND TAKEDOWN TIME SHOWS THAT WITNESS ROBERTS' ECONOMETRIC ESTIMATE OF VOLUME VARIABILITY FOR LETTERS ISN'T CONSISTENT WITH OPERATIONAL REALITIES IN MAIL PROCESSING.	8
VI. WITNESS MCCRERY'S RESPONSES TO VALPAK'S INTERROGATORIES ARE INCONSISTENT WITH WITNESS HALDI'S ASSERTION THAT MAIL PROCESSING IS OFTEN EXCLUSIVELY FOR A SINGLE CLASS OR SUBCLASS OF MAIL.....	9

1 **REBUTTAL TESTIMONY OF STUART W. ELLIOTT**
2 **ON BEHALF OF**
3 **MAGAZINE PUBLISHERS OF AMERICA, INC.,**
4 **ALLIANCE OF NONPROFIT MAILERS,**
5 **AMERICAN BUSINESS MEDIA,**
6 **DOW JONES & CO.,**
7 **THE MCGRAW-HILL COMPANIES, INC.,**
8 **AND NATIONAL NEWSPAPER ASSOCIATION**

9 **I. INTRODUCTION AND SUMMARY**

10 **A. Autobiographical Sketch**

11 My name is Stuart W. Elliott. I am a Vice President at SLS Consulting, a
12 consulting firm located in Washington, DC. SLS specializes in economic,
13 operational and environmental analyses on behalf of the mailing community. I
14 have a B.A. in Economics from Columbia University and a Ph.D. in Economics
15 from the Massachusetts Institute of Technology. After my formal education, I
16 was a Research Fellow at Carnegie Mellon University, a Senior Analyst at
17 Project Performance Corporation, and a Senior Associate at
18 PricewaterhouseCoopers. In addition to my position at SLS Consulting, I am
19 also currently a Board Director at the National Academies. I have presented
20 testimony in Docket No. R2000-1 on behalf of the National Newspaper
21 Association, the Recording Industry Association of America, and Magazine
22 Publishers of America, and in Docket No. MC2002-2 on behalf of Capital One
23 Services.

24 **B. Purpose of testimony**

25 The issue of the volume variability of mail processing has occupied
26 considerable attention in prior cases. The current case has seen a continued
27 examination of this issue, with testimony by witnesses Bozzo, Roberts, Neels,

1 and Haldi. Bozzo Direct (USPS-T-12); Robert Direct (OCA-T-1); Neels Direct
2 (UPS-T-1); Haldi Direct (VP-T-2).

3 The purpose of my testimony is to note some apparent inconsistencies
4 between the testimony of witnesses Roberts, Neels, and Haldi about the
5 variability and distribution of mail processing costs and some new evidence that
6 has been placed on the record about setup and takedown costs. This testimony
7 is restricted to a discussion of these inconsistencies, and does not discuss the
8 econometric modeling and data quality issues that are the focus of much of the
9 testimony of witnesses Roberts and Neels or the other areas of concern of
10 witness Haldi.

11 **II. IN THE CURRENT CASE, THE POSTAL SERVICE HAS PROVIDED A**
12 **RESPONSE TO THE COMMISSION'S REQUEST IN DOCKET NO.**
13 **R2000-1 FOR MORE EMPIRICAL INFORMATION ON SETUP AND**
14 **TAKEDOWN TIME IN OPERATIONS.**

15 The Commission's existing methodology for estimating the volume
16 variability of mail processing implicitly treats setup and takedown time as volume
17 variable. In Docket No. R2000-1, however, the Commission acknowledged that
18 USPS witness Degen's argument that "scheme changes, not volumes, drive the
19 number of setups and takedowns, particularly in secondary operations," could be
20 "partly valid." The Commission noted, in particular, that "higher volume will
21 sometimes lengthen runs within a scheme without multiplying set-up and tear-
22 down cycles." R2000-1 Op. & Rec. Decis., App. F, at 18-19.

23 The Commission raised the possibility, however, that "[n]arrow processing
24 windows can severely restrict the opportunity to lengthen runs for a given
25 scheme" and that "higher volumes are likely to cause the same scheme to be
26 replicated." *Id.* The Commission ultimately concluded that the record was "not

1 developed well enough to support definitive findings on what the ratio of fixed
2 set-up and tear-down time to runtime is in any of the operations modeled by
3 witness Bozzo." *Id.* at 19. The Commission asked that "[s]ome attempt to
4 quantify the amount of fixed setup/shutdown time ... be provided in future
5 proceedings." R2000-1 Op. & Rec. Decis. ¶ 3033.

6 The record in the current case provides a response to the Commission's
7 request in Docket No. R2000-1 for more empirical information on setup and
8 takedown time. In response to an interrogatory by MPA and ANM, USPS
9 operational witness McCrery has provided a nationwide snapshot of the sort
10 schemes running at five different times of day on May 18, 2006, on the Postal
11 Service's DBCS and AFSM 100 machines. The snapshot shows that the
12 majority of schemes are run on a single machine for all types of sorts. For
13 incoming secondary sorts—the majority of sort schemes—essentially all
14 schemes are run on a single machine. 11 Tr. 2896-97 (response of USPS
15 witness McCrery to MPA/USPS-T42-22(e)).

16 Witness McCrery confirms that most sort schemes are incoming
17 secondaries, which are almost always run on a single machine at a facility. 11
18 Tr. 2896 (response of USPS witness McCrery to MPA/USPS-T42-22(c), (d)). For
19 letters, of which 79 percent of the incoming secondary volume is sorted to DPS,
20 the DPS sorting procedure requires that each sort scheme be run on only a
21 single machine. McCrery Direct (USPS-T-42) at 12, n. 10; *id.* at 36, lines 15-18.
22 Even non-DPS incoming secondary sort schemes are almost always run on only
23 a single machine. 11 Tr. 2896 (response of USPS witness McCrery to
24 MPA/USPS-T42-22(d)).

1 Witness McCrery's testimony shows that the structure of Postal Service
2 sorting operations is such that the number of sort schemes run—and therefore
3 the time spent in setup and takedown—are better characterized as fixed rather
4 than variable with respect to volume changes. This is particularly true for the
5 incoming secondary schemes—i.e., the majority of schemes—because they are
6 rarely run on multiple machines.

7 **III. IMPROVED INFORMATION ABOUT MAIL PROCESSING**
8 **OPERATIONS ON THE RECORD CAN BE USED TO AUGMENT THE**
9 **COMMISSION'S METHOD OF ESTIMATING THE VOLUME**
10 **VARIABILITY OF MAIL PROCESSING TO REFLECT SETUP AND**
11 **TAKEDOWN TIME.**

12 The Commission's method of estimating variable costs in mail processing
13 rests on an operational analysis that classifies activities as either "fixed" or
14 "variable" based on operational considerations, and then uses operational data
15 from IOCS tallies to calculate the proportion of costs in the "variable" cost
16 categories. The Commission identifies a specific set of activity codes as fixed, in
17 contrast to the larger category of mail processing activities that are defined to be
18 variable. See R97-1 Op. & Rec. Decis. ¶¶ 3010-3012; R97-1 USPS-LR-H-1;
19 USPS-LR-L-100, file PRCACTV.rtf.

20 The IOCS redesign offers the opportunity to refine the Commission's
21 variability estimates with new information about time spent on setup and
22 takedown activities. McCrery Direct (USPS-T-42) at 36, lines 27-28. The extra
23 information in the redesigned IOCS enables the set of activities defined as fixed

1 in the Commission's approach to be augmented to incorporate setup and
2 takedown time.¹

3 Witness Bozzo's responses to MPA and ANM interrogatories provide
4 information about the costs associated with setup and takedown time for all mail
5 processing cost pools for which the redesigned IOCS provides appropriate
6 codes. 10 Tr. 2508-2526 (response of USPS witness Bozzo to MPA/USPS-T12-
7 1); 10 Tr. 2545-2546 (response of USPS witness Bozzo to MPA/USPS-T12-4,
8 MPA-ANM-4.xls, worksheet "data").

9 Table 1 shows the derivation of an augmented PRC approach that
10 incorporates setup and takedown time as an activity characterized as fixed with
11 respect to volume changes. This derivation is closely related to the bookkeeping
12 analysis presented by Witness McCrery, but relies on witness Van-Ty-Smith's
13 presentation of the results of the PRC method and witness Bozzo's interrogatory
14 response showing the tally costs associated with these cost pools. USPS-T-42
15 (McCrery Direct) at 34-40; USPS-T-11 (Van-Ty-Smith Direct) at 49; USPS-T-12
16 (Bozzo Direct) at 26-27; 10 Tr. 2508-2526 (response of USPS witness Bozzo to
17 MPA/USPS-T12-1).

¹ By excluding any consideration of container handlings and other activities which may be neither 100 percent volume variable nor totally fixed, this augmented version of the PRC approach may still provide a conservatively low estimation of the portion of mail processing costs that are not volume variable.

Table 1
Derivation of an Augmented PRC Variability Factor
that Incorporates Setup and Takedown Time
for the Econometrically-Estimated Cost Pools

Cost Pool	PRC Mail Proc Pool Costs (exclude migrated) (\$000)	PRC Mail Proc Vol. Var Costs (i.e. exclude fixed) (\$000)	Setup/ Takedown Costs (\$000)	Pool Costs Excluded Migrated, Fixed, Setup/ Takedown (\$000)	Augmented PRC Variability Factor
	[1]	[2]	[3]	[4]	[5]
D/BCS	1,475,153	1,457,174	120,921	1,336,253	90.6%
OCR/	200,470	197,724	13,844	183,880	91.7%
AFSM100	536,221	528,061	40,857	487,204	90.9%
FSM/1000	217,558	215,197	13,901	201,296	92.5%
SPBS OTH	408,619	396,934	25,755	371,179	90.8%
SPBSPRIO	144,729	139,953	8,429	131,524	90.9%
MANF	237,106	231,757	10,598	221,159	93.3%
MANL	906,346	889,652	25,950	863,702	95.3%
MANP	82,249	78,948	3,970	74,978	91.2%
PRIORITY	314,637	305,489	13,741	291,748	92.7%
1CANCEL	304,291	299,173	12,459	286,714	94.2%
Total	4,827,379	4,740,062	290,426	4,449,636	92.2%

[1] USPS-T-11 at 49 (Van-Ty-Smith Direct), Table 5

[2] USPS-T-11 at 49 (Van-Ty-Smith Direct), Table 5

[3] 10 Tr. 2508-2526 (response of USPS witness Bozzo to MPA/USPS-T12-1)

[4] = [2] - [3]

[5] = [4] / [1]

- 1 Table 1 covers only the cost pools examined econometrically by witness
- 2 Bozzo, but can be expanded to other mail processing cost pools in an analogous
- 3 manner. In response to an interrogatory, witness Bozzo provided information

1 derived from IOCS showing setup and takedown costs in other mail processing
2 cost pools totaling \$149 million, in addition to the \$290 million shown in Table 1
3 for the econometrically-estimated cost pools. See 10 Tr. 2545-2546 (Response
4 of witness Bozzo to MPA/USPS-T12-4, MPA-ANM-4-xls, worksheet "data").
5 Exhibit 1 summarizes the information for the other mail processing cost pools
6 with non-zero setup and takedown costs.

7 **IV. AN AUGMENTED VERSION OF THE COMMISSION'S APPROACH TO**
8 **ESTIMATING THE VARIABILITY OF MAIL PROCESSING THAT**
9 **REFLECTS SETUP AND TAKEDOWN TIME SHOWS THAT WITNESS**
10 **NEELS' ECONOMETRIC ESTIMATES OF VOLUME VARIABILITY**
11 **AREN'T CONSISTENT WITH OPERATIONAL REALITIES IN MAIL**
12 **PROCESSING.**

13 Witness Neels develops an econometric estimate of the volume variability
14 of mail processing at the plant level that aggregates over the sorting operations
15 where witness Bozzo has provided data. Witness Neels produces plant-level
16 volume variability estimates based on two different methods for screening the
17 MODS observations. The "strict" quality approach results in a variability estimate
18 of 114 percent, with a 95 percent confidence interval from 101 to 126 percent.
19 The "looser" quality approach results in a variability estimate of 103 percent, with
20 a 95 percent confidence interval from 96 to 110 percent. UPS-T-1 (Neels Direct)
21 at 54, Table 23.

22 Table 1 shows that witness Neels' plant-level estimates of the volume
23 variability of mail processing are inconsistent with the evidence presented in this
24 case about setup and takedown costs and the other operationally identified fixed
25 costs of mail processing. The last row of Table 1 provides an aggregate estimate
26 of variability that includes all the cost pools investigated by witness Bozzo. The
27 table shows that an augmented Commission estimate that reflects setup and

1 takedown time results in an aggregated variability factor of 92.2 percent, which
2 falls below the range of estimated plant-level volume variabilities derived by
3 witness Neels.

4 **V. AN AUGMENTED VERSION OF THE COMMISSION'S APPROACH TO**
5 **ESTIMATING THE VARIABILITY OF MAIL PROCESSING THAT**
6 **REFLECTS SETUP AND TAKEDOWN TIME SHOWS THAT WITNESS**
7 **ROBERTS' ECONOMETRIC ESTIMATE OF VOLUME VARIABILITY**
8 **FOR LETTERS ISN'T CONSISTENT WITH OPERATIONAL REALITIES**
9 **IN MAIL PROCESSING.**

10 Witness Roberts develops econometric estimates of the volume variability
11 of mail processing, disaggregated by shape. For letters, his recommended
12 estimate of variability is 127.6 percent with a standard error of 6.1 percentage
13 points. 23 Tr. 8300-8301 (response of OCA witness Roberts to USPS/OCA-T1-
14 8(b)). These estimates produce a 95 percent confidence interval from 115.6 to
15 139.6 percent.²

16 To see whether witness Roberts' estimates of the volume variability of
17 mail processing for letters are consistent with the operational realities in mail
18 processing, one can compare his estimates to augmented Commission estimates
19 of variability in the letter cost pools. Summing over the three letter rows in Table
20 1 (D/BCS, OCR/, and MANL) produces an augmented Commission volume
21 variability estimate for letters of 92.3 percent, which falls below the range of
22 estimates provided by witness Roberts. This comparison suggests that the
23 letter-shape econometric estimate provided by witness Roberts is inconsistent

² Roberts provides several estimates for the variability of flats but does not recommend that any of them be used for allocating postal costs because of their sensitivity to the data sample chosen and the imprecision of the estimates. OCA-T-1 at 44-50, especially at p. 50, lines 5-18.

1 with the evidence presented in this case about setup and takedown costs and the
2 other operationally identified fixed costs of mail processing.

3 **VI. WITNESS MCCRERY'S RESPONSES TO VALPAK'S**
4 **INTERROGATORIES ARE INCONSISTENT WITH WITNESS HALDI'S**
5 **ASSERTION THAT MAIL PROCESSING IS OFTEN EXCLUSIVELY FOR**
6 **A SINGLE CLASS OR SUBCLASS OF MAIL.**

7 Witness Haldi states that "mail processing within shape-related MODS
8 cost pools is often exclusively or primarily for a single class or subclass of mail."
9 VP-T-2 (Haldi Direct) at 43. To support this argument, Haldi cites responses of
10 USPS witness McCrery to ValPak interrogatories concerning instances in which
11 individual classes or subclasses of mail are sorted alone. However, a review of
12 the complete set of interrogatory responses provided by witness McCrery
13 indicates that mail processing within shape-related cost pools more typically
14 mixes multiple classes or subclasses of mail.

15 As noted above, witness McCrery has confirmed that incoming secondary
16 sortations form the majority of sort schemes and therefore the majority of the
17 fixed costs of setup and takedown. Witness McCrery's responses to ValPak
18 interrogatories show clearly that the three major mail classes are generally
19 merged for incoming secondary sorts for both letters and flats:

- 20 • "[B]arcoded Periodicals letters are merged with First-Class Mail letters
21 during both incoming primary and secondary sortation." 11 Tr. 3113
22 (Response of witness McCrery to VP/USPS-T42-12(a)).
- 23 • "In general, Standard Regular letters are merged with First-Class Mail
24 letters during incoming secondary sortation." 11 Tr. 3113 (Response
25 of witness McCrery to VP/USPS-T42-12(c)).

1 • "Barcoded machinable Periodicals flats are routinely merged with First-
2 Class Mail flats at incoming secondary sortation scheme on the AFSM
3 100." 11 Tr. 3114 (Response of witness McCrery to VP/USPS-T42-
4 13(a)).

5 • "If the operational window allows, barcoded machinable Standard
6 Regular flats are routinely merged with First-Class Mail flats during
7 incoming secondary sortation on the AFSM 100." 11 Tr. 3115
8 (Response of witness McCrery to VP/USPS-T42-13(c)).

9 The primary exception to the merging of subclasses during incoming
10 secondary sortation seems to be that Standard flats may be processed
11 separately if the operational window does not allow them to be merged with First
12 and Periodicals flats. However, as witness Haldi notes, this will no longer be
13 possible with the coming move to the flat sequence sorter ("FSS"). VP-T-2 (Haldi
14 Direct) at 47.

15 For the other types of sorts—the minority of sort schemes—the different
16 classes of flats are sometimes but not always processed together, whereas First-
17 Class and Standard letters are generally processed separately when possible:

18 • "Generally, outgoing Periodicals flat-shaped mail is kept separate from
19 First-Class Mail on the AFSM 100. However, recent operational and
20 mail preparation changes will merge the processing of outgoing
21 Periodicals flat mail with First-Class Mail flats at origin plants for
22 destinations that are linked by surface transportation ... Furthermore,
23 the balance of Periodicals flats requiring outgoing sortation is on
24 occasion merged with Standard flats, though in these cases the

1 merged product is treated as Periodicals." 11 Tr. 3110 (Response of
2 witness McCrery to VP/USPS-T42-10(c)).

3 • "Standard Regular flats receiving outgoing primary sortation should not
4 be merged with First-Class Mail flats, though on limited occasions it
5 does occur." 11 Tr. 3111 (Response of witness McCrery to VP/USPS-
6 T42-10(e)).

7 • "Standard Regular flats receiving outgoing secondary sortation should
8 not be merged with First-Class Mail flats, though on limited occasions it
9 does occur." 11 Tr. 3114 (Response of witness McCrery to VP/USPS-
10 T42-11(e)).

11 • "Certain plants occasionally merge barcoded machinable Periodicals
12 flats with First-Class Mail flats during incoming primary sortation
13 scheme, while other plants routinely do so." 11 Tr. 3114 (Response of
14 witness McCrery to VP/USPS-T42-13(a)).

15 • "Certain plants occasionally merge barcoded machinable Standard
16 Regular flats with either First-Class Mail or Periodicals flats during
17 incoming primary sortation while other plants routinely do so." 11 Tr.
18 3115 (Response of witness McCrery to VP/USPS-T42-13(c)).

19 • "Since volume of Periodicals letter-shaped mail requiring outgoing
20 primary sortation is so small, it may be merged with First-Class Mail."
21 11 Tr. 3108 (Response of witness McCrery to VP/USPS-T42-8(c)).

22 • "In general, Standard Regular letter mail processing is kept separate
23 from other mail classes on outgoing primary sortation. On limited
24 occasions, Standard Regular letter mail is merged with First-Class

1 mail, for example, if there is insufficient volume of Standard Regular
2 letter mail to justify setting up a separate sortation scheme." 11 Tr.
3 3108 (Response of witness McCrery to VP/USPS-T42-8(e)).

4 • "Since volume of Periodicals letter-shaped mail requiring outgoing
5 secondary sortation is so small, it may be merged with First-Class
6 Mail." 11 Tr. 3109 (Response of witness McCrery to VP/USPS-T42-
7 9(c)).

8 • "In general, Standard Regular letter mail processing is kept separate
9 from other mail classes on outgoing secondary sortation. On limited
10 occasions, Standard Regular letter mail is merged with First-Class
11 Mail, for example, if there is insufficient volume of Standard Regular
12 letter mail to justify setting up a separate sortation scheme." 11 Tr.
13 3109 (Response of witness McCrery to VP/USPS-T42-9(d)).

14 • "[B]arcoded Periodicals letters are merged with First-Class Mail letters
15 during both incoming primary and secondary sortation." 11 Tr. 3113
16 (Response of witness McCrery to VP/USPS-T42-12(a)).

17 • "On limited occasions, Standard Regular letters are merged with First
18 Class letters on incoming primary, for example, if there is not enough
19 volume of Standard Regular letters to justify setting up separate
20 sortation schemes." 11 Tr. 3113 (Response of witness McCrery to
21 VP/USPS-T42-12(c)).

22 Thus, the evidence presented in this case suggests that single-class
23 sortation runs occur only for a minority of sort schemes, and primarily for letter-
24 shaped mail.

Exhibit 1
Derivation of an Augmented PRC Variability Factor
that Incorporates Setup and Takedown Time
for non-Econometrically-Estimated Cost Pools
with Non-Zero Setup and Takedown Costs

Cost Pool	PRC Mail Proc Pool Costs (exclude migrated) (\$000)	PRC Mail Proc Vol. Var Costs (i.e. exclude fixed) (\$000)	Setup/ Takedown Costs (\$000)	Pool Costs Excluded Migrated, Fixed, Setup/ Takedown (\$000)	Augmented PRC Variability Factor
	[1]	[2]	[3]	[4]	[5]
MECPARC	5,031	4,674	191	4,483	89.1%
1SACKS_M	24,449	22,476	703	21,773	89.1%
1TRAYSRT	159,440	150,371	5,387	144,984	90.9%
1DSPATCH	221,820	218,180	21,516	196,664	88.7%
1FLATPRP	298,200	295,624	12,172	283,452	95.1%
1MTRPREP	29,536	28,687	1,852	26,835	90.9%
1OPBULK	225,563	222,798	9,586	213,212	94.5%
1OPPREF	526,808	517,192	17,517	499,675	94.8%
1PLATFRM	1,510,017	1,389,543	7,336	1,382,207	91.5%
1POUCHNG	129,571	126,322	9,088	117,234	90.5%
1PRESORT	33,924	32,736	689	32,047	94.5%
1SACKS_H	118,671	115,134	7,848	107,286	90.4%
NMO	39,763	35,839	597	35,243	88.6%
OTH	225,428	213,992	3,758	210,233	93.3%
PSM	124,053	120,226	2,508	117,719	94.9%
SPB	56,223	54,213	1,037	53,175	94.6%
SSM	40,480	37,577	134	37,443	92.5%
N_Allied	372,115	361,035	4,484	356,552	95.8%
N_Auto	200,461	198,391	14,221	184,170	91.9%
N_Man_F	580,938	576,673	6,596	570,076	98.1%
N_Man_L	760,341	749,106	11,538	737,568	97.0%
N_Man_P	296,285	294,203	10,176	284,027	95.9%
Total	5,979,118	5,764,991	148,933	5,616,058	93.9%

[1] USPS-T-11 (Van-Ty-Smith Direct) at 49-50, Table 5

[2] USPS-T-11 (Van-Ty-Smith Direct) at 49-50, Table 5

[3] 10 Tr. 2545-2546 (response of witness Bozzo to MPA/USPS-T12-4, MPA-ANM-4-xls, worksheet "data")

[4] = [2] - [3]

[5] = [4] / [1]

1 CHAIRMAN OMAS: This now brings us to oral
2 cross-examination.

3 Three requests for oral cross-examination
4 have been filed. Mr. Costich, you may begin.

5 MR. COSTICH: Thank you, Mr. Chairman.

6 CROSS-EXAMINATION

7 BY MR. COSTICH:

8 Q Good morning, Dr. Elliott.

9 A Good morning.

10 Q Could you refer to page 6 of your testimony?

11 A I have it.

12 Q I'd like to ask you a few questions about
13 your Table 1. First off, can you tell me what the
14 difference is between this Table 1 and your Exhibit 1
15 that's at the back of the testimony?

16 A Table 1 is the cost pools that were
17 estimated econometrically by Witness Bozzo, and
18 Exhibit 1 in the back is all of the other cost pools,
19 so it's not estimated econometrically, for which in
20 the MPA interrogatory to Witness Bozzo there were
21 nonzero costs associated with setup and takedown time.

22 Q In Table 1, Column 1, it's headed PRC Mail
23 Processing Pool Costs. These are the total costs in
24 these cost pools?

25 A What I have done is to take the title that

1 is used in Witness Van-Ty-Smith's Table 5 and so my
2 understanding is that with the Commission's approach
3 that there are some costs that are migrated elsewhere
4 so hence the "exclude migrated" in parentheses there,
5 but then otherwise those are the costs within the cost
6 pool.

7 Q And then Column 2 is removal of fixed costs?

8 A Right, as defined in the Commission's
9 approach.

10 Q And Table 3 is the setup/takedown costs?

11 A As identified by Witness Bozzo, yes.

12 Q And they are of rather small magnitude?

13 A They are what they are. They total 290
14 million for the econometrically estimated cost pools.

15 Q So Column 4 is just the removal of those
16 costs from the previous column on the other side?

17 A That is correct.

18 Q So by this technique there's no way any cost
19 pool could equal 100 percent. Is that correct?

20 A Well, given the particular calculations that
21 this goes through, it's clear that none do.

22 There are I suspect, but am not sure, other
23 cost pools for which the traditional Commission method
24 does not actually define fixed cost, and there were no
25 setup and takedown costs identified by Witness Bozzo

1 so I suspect that there are some cost pools not
2 included here and not included in Exhibit 1 that would
3 be 100 percent under this method, but I have not
4 checked that.

5 Q But there's no way anything could be more
6 than 100 percent?

7 A Not with the costs as considered here, no.

8 MR. COSTICH: Thank you. I have no further
9 questions, Mr. Chairman.

10 CHAIRMAN OMAS: Thank you, Mr. Costich.

11 Mr. McKeever?

12 MR. MCKEEVER: Thank you, Mr. Chairman.

13 John McKeever for United Parcel Service.

14 CROSS-EXAMINATION

15 BY MR. MCKEEVER:

16 Q Dr. Elliott?

17 A Good morning.

18 Q Could you turn to page 3 of your testimony,
19 please?

20 A I have it.

21 Q There at lines 6 to 15 in that paragraph you
22 indicate that your alternative calculations of mail
23 processing volume variability are based on a snapshot
24 of the sort schemes running on May 18, 2006, provided
25 by Postal Service Witness McCreary in his response to

1 an interrogatory. Is that correct?

2 A That's correct.

3 Q Do you know whether the one day chosen for
4 that snapshot was a high volume day, a low volume day
5 or a medium volume day?

6 A I'm afraid I do not.

7 Q Okay. When you calculated your alternative
8 variability estimates you didn't adjust the setup/
9 takedown data in any way to account for the extent to
10 which sorting schemes were in that snapshot running
11 simultaneously multiple schemes, did you?

12 A No. The Commission's approach, which I am
13 augmenting, has a forced choice between zero percent
14 and 100 percent for the level of variability and so
15 within that framework you have to choose one or the
16 other.

17 Q So in other words, you treated all setup and
18 takedown costs as having zero volume variability?

19 A Yes. Going from the McCrery response, the
20 conclusion was that it's better to characterize it as
21 near zero rather than near 100 percent; that that near
22 zero is the more accurate characterization and so zero
23 percent out of the two options available is the better
24 approximation.

25 MR. MCKEEVER: That's all I have, Mr.

1 Chairman.

2 CHAIRMAN OMAS: Thank you, Mr. McKeever.

3 Mr. Olson?

4 CROSS-EXAMINATION

5 BY MR. OLSON:

6 Q Dr. Elliott, Bill Olson for Valpak. I'd
7 like to ask you to begin by turning to page 9 of your
8 testimony.

9 A I have it.

10 Q On lines 20 and 21 you quote Witness McCrery
11 as follows. You say, "Barcoded periodicals letters
12 are merged with first class mail letters during both
13 incoming primary and secondary sortation," correct?

14 A Correct.

15 Q Since you're appearing on behalf of a group
16 of periodicals mailers, would you happen to know the
17 number of periodicals in the system?

18 A I'm afraid I don't have that off the top of
19 my head.

20 Q If I were to suggest that there are about
21 nine billion periodicals of which about I believe the
22 number is 90 million pieces are periodicals letters,
23 would you accept that?

24 A Subject to check, yes.

25 Q Okay. Would you know the volume of first

1 class letters? If I were to suggest it was about 91
2 or 92 billion pieces, could you accept that subject to
3 check?

4 A I'll accept that subject to check.

5 Q Okay. On most days if you take the two of
6 those and compare them would you agree you get a
7 number of periodicals letters which is slightly less
8 than one-tenth of one percent of the number of first
9 class letters?

10 A I'll assume that you've done the mathematics
11 correct.

12 Q Okay. I just moved a decimal point.

13 A Right.

14 Q It's all nines in here. Nine billion total
15 periodicals, 90 million periodical letters and 91 or
16 92 billion first class.

17 On most days would you expect that the
18 volume of incoming periodical letters to be somewhere
19 in that range? In other words, it's spread out rather
20 evenly so it would be a small amount in any event on
21 any given day compared to first class letters?

22 A It's not something that I have given much
23 thought to.

24 Q Would it be fair to say that in comparison
25 to the volume of first class letters that the volume

1 of periodical letters is incidental?

2 A I don't know whether you're attaching some
3 meaning in particular to incidental as a term.

4 I mean, they're clearly in there, and in
5 relationship to the costing issues that we're talking
6 about it presumably matters in some way whether
7 they're a part of the sortations that are at issue in
8 this bullet point.

9 Q Right. Well, let me give you a context. If
10 the sort scheme that is being run is one where first
11 class letters are being sorted and merged with
12 periodicals letters -- do you have that in mind?

13 A Uh-huh.

14 Q And then if it were decided not to run that
15 sort scheme for first class letters and the only
16 pieces that had to be sorted were periodicals letters,
17 would you expect the Postal Service to set up and run
18 a separate sort scheme just for that incidental volume
19 of periodicals letters?

20 A I would expect them to do something.

21 Q Do you think that there might be more
22 efficient and less costly ways to handle that small a
23 volume of periodicals letters if those are the only
24 letters that had to be sorted?

25 A At that point it probably depends on how the

1 letters are grouped and sort of exactly what
2 thresholds you have at different places, but we're
3 about to outstrip the operational knowledge that I
4 have. I mean, clearly they will need to be sorted in
5 some way.

6 Q Certainly hand sortation is an option which
7 could be considered for a very small volume of
8 periodicals letters on a given day?

9 A That would in some cases potentially be an
10 option, and operational people would know far better
11 than I, but there are the other kinds of sortation
12 which potentially those could be merged with.

13 Q Well, let's go back to the situation where
14 they are merged, where periodicals letters are merged
15 with first class letters, and ask you if you believe
16 that the presence of that incidental I'm going to
17 characterize -- you can disagree with that if you
18 want, but the presence of that incidental volume of
19 periodicals letters.

20 Is that sufficient to convert the setup and
21 takedown costs of the sort scheme into common costs
22 that cannot be attributed?

23 A Well, in this case for the bullet that
24 you're talking about we're talking about letters and
25 we're talking about incoming secondary and so we're

1 going to have everything merged together in the cases
2 where we're sorting to delivery point sequence.

3 It is the case that the periodicals out of
4 the total letters are a very small portion, but even
5 setting that aside you've got everything merged
6 together in any case so, I mean, it seems as though
7 this is precisely the case where it really is hard to
8 link this to any particular class.

9 Q So your view is that once you interject even
10 an incidental volume of periodicals letters into that
11 dominant first class sort that you have converted
12 those setup and takedown costs into common costs that
13 cannot be attributed?

14 A Well, but I'm answering also with respect to
15 the fact that in this case you also have standard
16 letters in there.

17 Q Okay. But I've come up with a hypothetical
18 basically. It has to do with a sort scheme that sorts
19 periodicals letters and first class letters together,
20 and I'm trying to understand the principles that
21 you're advocating and the criticism you make of Dr.
22 Haldi.

23 I'm trying to understand better where you
24 draw the line, and I think it's a pretty simple
25 hypothetical where you have periodicals letters and

1 first class letters, and I'm asking you if the
2 presence of that incidental volume of periodicals
3 letters converts the setup and takedown costs for the
4 entire run into common costs which cannot be
5 attributed.

6 MR. LEVY: Excuse me. I'm going to either
7 object to the question or ask counsel to define the
8 term incidental.

9 MR. OLSON: One tenth of one percent or
10 less. That's the exact context we're dealing with.

11 THE WITNESS: Could you repeat the question,
12 please?

13 BY MR. OLSON:

14 Q Is it your opinion that the presence of even
15 an incidental volume of periodical letters with the
16 first class letters would be sufficient to convert the
17 setup and takedown costs of the sort scheme into
18 common costs that cannot be attributed?

19 A Roughly speaking, yes.

20 Q How does roughly speaking qualify yes in
21 this case? I mean, is it yes?

22 A Yes.

23 Q You would say the moment you have even less
24 than a tenth of one percent of periodicals letters in
25 the sort scheme with first class letters that as an

1 economist you say poof, those are now common costs and
2 cannot be attributed?

3 That would be your advice to the Commission?
4 I'm just trying to clarify your answer.

5 A I guess my sense is that it's large enough
6 that we're talking about it and so yes.

7 Q Let me ask you. Dr. Haldi's testimony at
8 page 52, footnote 58, refers to a library reference of
9 the Postal Service, USPS-LR-1. Are you familiar with
10 that library reference?

11 A No.

12 Q It's the cost segments and components report
13 that describes each cost segment, and it has some
14 appendices to it on costing. Does that ring a bell?

15 A Generally, yes, but --

16 Q Have you ever read the appendix that is
17 cited by Dr. Haldi? Did you go back and look at that?

18 A I don't believe I have read that appendix,
19 no.

20 Q Okay. Let's skip this. Let me ask you to
21 look at page 10 of your testimony, please, line 5.
22 You quote here Witness McCrery's statement, "If the
23 operational window allows, barcoded machinable
24 standard regular flats are routinely merged with first
25 class mail flats during incoming secondary sortation

1 on the AFSM-100," correct?

2 A Correct.

3 Q Now, I know you're quoting Witness McCrery,
4 but do you have any idea during the course of some
5 period of time -- a year or whatever -- how often the
6 operational window allows such merging of standard
7 regular and first class flats?

8 A No, I do not. I'm taking McCrery at his
9 word in terms of routinely merged.

10 Q Well, actually what the sentence says is,
11 "If the operational window allows..." Do you see that
12 beginning?

13 A Yes. That is correct.

14 Q Okay. That's what I'm focusing on and
15 asking you if you have any idea how often the
16 operational window allows.

17 I'm not focused on the routinely because
18 that only applies when the operational windows allows,
19 correct?

20 A Correct. Yes.

21 Q Okay.

22 A And that's a situation which I guess is
23 something in which operational windows allow now, but,
24 as the paragraph following that states, will no longer
25 be possible with the coming move to the flats sequence

1 sorter.

2 Q Okay. You can't add to the record for the
3 Commission as to how often the operational window
4 allows, correct?

5 A No. That is correct.

6 Q Okay. Do you know offhand if the Postal
7 Service has any data which would show this, which
8 would show how often the operational window allows
9 merging of first class and standard flats?

10 A No, I do not.

11 Q To answer the question about how often the
12 operational window allows we'd have to gather some
13 data to know that, would we not?

14 A Yes, to answer the question with respect to
15 the current state of affairs, which is going to be
16 apparently over shortly.

17 Q Let me ask you to look at page 12, lines 22
18 and 23. There you say, "The evidence presented in
19 this case suggests that single class sortation runs
20 occur only for a minority of sort schemes," correct?

21 A That's correct.

22 Q When you say a minority of sort schemes as
23 to what the evidence suggests, could that be 49
24 percent the way you use the term?

25 A It could be. Given the snapshot from

1 McCrery, my sense is that that's probably not the
2 case.

3 Q But other than saying a minority of sort
4 schemes, you can't give us a better estimate of what
5 the percentage would be there, I take it?

6 A I have not attempted to do that, no.

7 Q Let me ask you this. When sort schemes are
8 run for a single class of mail do you concur with Dr.
9 Haldi then that in those instances the setup and
10 takedown costs should be treated as incremental costs
11 of the single class of mail in question, and do you
12 agree that those costs that are incremental to a
13 single class of mail can and should be attributed to
14 the class of mail for which the sort scheme is run?

15 A Yes.

16 MR. OLSON: Thank you, Dr. Elliott.

17 I have no more questions, Mr. Chairman.

18 CHAIRMAN OMAS: Thank you, Mr. Olson.

19 Is there anyone else who wishes to cross-
20 examine this witness?

21 (No response.)

22 CHAIRMAN OMAS: Are there any questions from
23 the bench?

24 (No response.)

25 CHAIRMAN OMAS: There being none, Mr. Levy,

1 would you like some time with your witness?

2 MR. LEVY: May we have three minutes,
3 please?

4 CHAIRMAN OMAS: Yes, sir.

5 MR. LEVY: Thanks.

6 (Whereupon, a short recess was taken.)

7 CHAIRMAN OMAS: Mr. Levy?

8 MR. LEVY: No redirect, Mr. Chairman.

9 CHAIRMAN OMAS: Thank you, Mr. Levy.

10 Mr. Elliott, that completes your testimony
11 here today. We appreciate your appearance and your
12 contribution to our record, and you are now excused.
13 Thank you.

14 THE WITNESS: Thank you.

15 (Witness excused.)

16 CHAIRMAN OMAS: Mr. Heselton, will you
17 introduce your next witness, please?

18 As before, Mr. Bozzo has been sworn in, so
19 please proceed.

20 Whereupon,

21 A. THOMAS BOZZO

22 having been previously duly sworn, was
23 recalled as a witness herein and was examined and
24 testified further as follows:

25 //

1 (The document referred to was
2 marked for identification as
3 Exhibit No. USPS-RT-5.)

4 DIRECT EXAMINATION

5 BY MR. HESELTON:

6 Q Mr. Bozzo, just so the record is clear here
7 on who is testifying today, could you identify
8 yourself for the record, please?

9 A My name is A. Thomas Bozzo.

10 MR. HESELTON: Mr. Chairman, I am handing
11 the witness two copies of the testimony identified as
12 Rebuttal Testimony of A. Thomas Bozzo on Behalf of
13 United States Postal Service.

14 BY MR. HESELTON:

15 Q Have you reviewed these two copies of
16 testimony?

17 A Yes, I have.

18 Q And was this testimony prepared by you or
19 under your direction?

20 A It was.

21 Q Do you have any changes or corrections to
22 make at this time?

23 A Not in addition to the errata filed on
24 December 1.

25 Q And with these changes or the version filed

1 on December 1, would your testimony be the same today
2 as it was then?

3 A Yes, it would.

4 MR. HESELTON: Mr. Chairman, I ask that the
5 rebuttal testimony on behalf of the United States
6 Postal Service marked as USPS-RT-5 be received in
7 evidence at this time.

8 CHAIRMAN OMAS: Is there any objection?

9 (No response.)

10 CHAIRMAN OMAS: Hearing none, I will direct
11 counsel to provide the reporter with two copies of the
12 corrected testimony of A. Thomas Bozzo.

13 That testimony is received into evidence and
14 is to be transcribed.

15 (The document referred to,
16 previously identified as
17 Exhibit No. USPS-RT-5, was
18 received in evidence.)

19 //

20 //

21 //

22 //

23 //

24 //

25 //

Revised December 1, 2006

Postal Rate Commission
Submitted 12/1/2006 1:34 pm
Filing ID: 55226
Accepted 12/1/2006

USPS-RT-5

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D. C. 20268-0001

POSTAL RATE AND FEE CHANGES, 2006

Docket No. R2006-1

REBUTTAL TESTIMONY
OF
A. THOMAS BOZZO
ON BEHALF OF THE
UNITED STATES POSTAL SERVICE

Revised December 1, 2006

Table of Contents

List of Tables	v
Category 2 Library Reference to be Sponsored with USPS-RT-5	vi
Autobiographical Sketch	vii
Purpose and Scope of Testimony	1
I. Dr. Haldi Mischaracterizes Economic Cost Theory Pertaining to Economies of "Scale" and the Treatment of Non-Volume-Variable Costs.	2
I.A. Dr. Haldi's Discussion of Economies of "Scale" and "Density" Mischaracterizes the Relevant Economic Theory and the Postal Service Models and Should Be Disregarded.....	2
I.A.1. Dr. Haldi Admits that Cost Elasticities are an Appropriate Aim of the Analysis.....	2
I.A.2. Dr. Haldi's Claim that Cost Elasticities Provide Little Information on the Presence of "Scale Economies" Is Incorrect.	2
I.A.3. Dr. Haldi's Claim that the Postal Service Models Omit Facility Size Variables is False.....	4
I.B. Dr. Haldi's Theories of Setup Costs Have Negligible Bearing on Costs for CRA Subclass Categories.....	5
I.B.1. Setup Costs are Not Marginal Costs, and a Significant Portion of Setup Costs is "Fixed," Particularly in Incoming Schemes.	6
I.B.2. The Postal Service's Incremental Cost Model Appropriately Accounts for Inframarginal Variable Costs.....	8
I.B.3. In "Class-Specific" Schemes, "Fixed" Setup Costs Are Not Attributable To Subclasses as Incremental Costs; Mixed-Class Schemes are Not Attributable at the Class or Subclass Level.....	8
I.B.4. Dr. Haldi's Concerns are Moot in Key Outgoing Operations Using Postal Service Variabilities.....	9
I.B.5. Non-Volume-Variable Costs in Sorting Operations are Insufficient to Change the Outcome of Class-Level Incremental Cost Tests.....	10

II. Major Errors Lead Dr. Neels's Analysis of IOCS Activity Data for MODS Cost Pools to Greatly Overstate The Possibility of Clocking Errors in Sorting Operations.....	12
II.A. Dr. Neels Admits to Mistakenly Omitting Several Important Operations from His Analysis.....	12
II.B. Dr. Neels's Analysis Inappropriately Implies Certain "Overheads" and Incidental Other Activities Constitute Clocking Errors.	13
II.C. A Corrected Analysis Shows MODS and IOCS Sorting Activities to be Largely Consistent.	13
II.D. IOCS "Administrative" Tallies in MODS Mail Processing are Not Problematic.	15
II.D.1. The Small Fractions of "Administrative" Tallies in Sorting Operations are Not Unexpected.	16
II.D.2. The Vast Majority of "Administrative" Tallies are in MODS Operations Expressly Defined for Mail Processing Administration.	17
II.D.3. The "Administrative" Tallies are Appropriately Included in Cost Segment 3.1.	19
III. Dr. Neels Greatly Overstates the Extent of MODS Data Problems.....	20
III.A. Dr. Neels's Current Testimony is Inconsistent With His Past Approach to MODS Data "Anomalies.".....	21
III.B. Dr. Neels's Critiques Fail to Correctly Account for MODS Measurement Methods.	22
III.B.1. Some of Dr. Neels's Screening Criteria, Perversely, Identify More Anomalies When the Errors are Relatively Small.....	23
III.B.2. Some of Dr. Neels's Screening Criteria Defeat the Purpose of Cost Pools.	24
III.B.3. The AP and Weekly Productivity Screens Also Tend to Identify Relatively Small Data Errors.....	26
III.B.4. The Use of Robust Estimation Procedures Reduces the Need for Screening Based Solely on FHP Conversion Error.	27
III.C. Errors and Omissions Make Dr. Neels's Analysis of the Postal Service Models Highly Misleading.....	28

III.C.1. Dr. Neels Concedes the Robustness of the Postal Service Models' Main Results.....	28
III.C.2. Dr. Neels's Split Sample Analyses Fail to Demonstrate Truly Significant Problems with the Postal Service Results.....	29
II.C.3. Dr. Neels's Fixed-Effects Analysis Inappropriately Fails to Account for the Statistical Properties of the Estimates.....	31
III.C.4. Dr. Neels's Analysis of Instrument Relevance has No Statistical Content At All and Must Be Rejected.....	33
III.C.5. Dr. Neels's Analysis of Equipment Deployments Does Not Demonstrate a Simultaneity Problem.....	34
IV. Dr. Neels's Alternative Model, Correctly Applied, Supports the Postal Service Variability Results.....	36
IV.A. Dr. Neels's Alternative Model Is Inappropriate for Sorting Operations	37
IV.A.1. Dr. Neels's Account of Sorting Operation Activities Does Not Suggest Significant Cross-Operation Effects.....	37
IV.A.2. Dr. Neels Fails to Demonstrate Cross-Operation and/or Cross-Shape Effects, While Inappropriately Failing to Represent Key Patterns of Cost Causation.....	39
IV.B. Applied to Allied Labor and Broader Plant Labor Hours, Dr. Neels's Model Gives Results Consistent With the Postal Service Methods.....	41
IV.B.1. As a Model of Allied Labor Operations, Dr. Neels's Model Is Similar To Models Previously Advanced By the Postal Service	41
IV.B.2. Contrary to Dr. Neels's Claims, His Models Could Have Been Estimated with Allied Labor Workhours.....	42
IV.B.3. Dr. Neels's Model Also Shows Variabilities Comparable to the Postal Service CRA When Applied to Total "Function 1" Workhours	43
V. Prof. Roberts's Models are Potentially Workable, but Would Benefit from Significant Improvements.....	45
V.A. Prof. Roberts's Theoretical Framework Is Conceptually Valid, but Cannot Fully Specify the Empirical Models.....	45
V.A.1. Prof. Roberts Fails to Articulate the Relationship Between His "Outputs" and the Costs He Purports to Explain.....	45

V.A.2. A Correct Understanding of the Relationship Between TPF and FHP Indicates a Closer Relationship Between the OCA and Postal Service Models than Prof. Roberts Admits.....	46
V.B. Prof. Roberts's Updates to the Two-Output Models are Unjustified and Inconsistent With His Previous Methods.	48
V.B.1. Prof. Roberts's Sample Period is Unnecessarily Short, Particularly in Light of His Previous Justification of Much Longer Sample Periods Covering Equally Significant Operational Changes.	49
V.B.2. Prof. Roberts's Approach to Seasonal Dummy Variables Is Neither Operationally nor Econometrically Justified, and is Contrary to His Correct Earlier Treatment	51
V.B.2.a. Contrary to Prof. Roberts's Claims, the Postal Service Operational Testimony Did Identify Seasonal Factors Affecting Workhours.....	51
V.B.2.b. Prof. Roberts's Conclusion that Failure of the Quarterly Dummy Variables as Instruments is a "Spurious" Result is Unwarranted.....	53
V.C. The Postal Service's Updates of Prof. Roberts's March 2006 Models is Superior to the Prof. Roberts's Versions in OCA-T-1.....	55
V.C.1. Prof. Roberts's Explanations for Rejecting the Postal Service Update are Incoherent.	55
V.C.2. The Postal Service Update of Prof. Roberts's March 2006 Model Yields More Robust and Plausible Results, Including by Prof. Roberts's Own Explanations.....	57
V.D. Prof. Roberts's "Additional Outputs" Models Point the Way To Improvements, But Prof. Roberts's Implementation is Faulty.....	59
V.D.1. Prof. Roberts Inappropriately Includes Automation Volumes with "Nonautomation" Letters.....	60
V.D.2. Correctly Incorporating the Manual Mailstream in the Roberts Models Shows Expected Behavior of Workhours, though the Models are Inefficient.....	60
VI. Prof. Roberts's "Proportionality Assumption" Analysis Repeats Many of Dr. Neels's Errors from Docket No. R2000-1 and Fails to Demonstrate True Violations of "Proportionality" Between Piece Handlings and Delivered Volumes.	62
VI.A. The "Distribution Key" Method is Necessary, Appropriate, and Used by Prof. Roberts.	62

VI.B. Prof. Roberts's Models Purporting to Show Violations of Proportionality Do No Such Thing When Fundamental Errors Are Corrected.	63
VI.B.1. As With the Labor Demand Models, Prof. Roberts's Choice of Instrumental Variables is Inappropriate.	63
VI.B.2. Prof. Roberts Misspecifies the Relationship Between TPF and FHP	65
VI.B.3. Valid Shape-Level Specifications Show No Significant Violations of "Proportionality" Between TPF and FHP.	67
VII. Appropriate Methods for Applying Roberts-Style Models to Cost Segment 3.1 Can and Should Make Use of Existing Data Systems and Analyses	69
VII.A. The Subclass Volume-Variable Cost Method Described by Prof. Roberts Clearly Applies the Distribution Key Method	69
VII.B. Limitations of Prof. Roberts's "Output" Measures Suggest that IOCS-Based Distribution Keys are Appropriate to Represent Cost Differences Within Volume Categories.	70
VII.C. Using Prof. Roberts's Single Output Model is Conceptually Inappropriate and Does Not Solve Distribution Key Issues	72
VII.D. Using Existing Cost Pools and Distribution Keys with the Roberts Model.	73
VIII. Conclusions	75

List of Tables

Table 1. Comparison of MODS and IOCS Activity Responses	14
Table 2. IOCS "Administrative" Tallies for Select Operations, BY 2005.	18
Table 3. Combined Split-sample results Versus Postal Service BY 2005 Models, Small vs. Large Plants	30
Table 4. Combined Split-sample results Versus Postal Service BY 2005 Models, "Growing" vs. Other Plants.	31
Table 5. Standard Errors of Neels Productivity Ratios	32
Table 6. Results from Letter-Shape Version of Neels Model	40
Table 7. Results of Neels Mail Processing Model Applied to LDC 17 (Allied Labor) Workhours	42
Table 8. . Results of Neels Mail Processing Model Applied to Total Function 1 (MODS Plant) Workhours	44

Table 9. Principal Results for Roberts Letter Models with Manual and Automated
FHP "Outputs"61

Table 10. Results for Shape-Level TPF-FHP Models68

Category 2 Library Reference to be Sponsored with USPS-RT-5

USPS-LR-L-192 Materials Relating to the Rebuttal Testimony of A. Thomas
Bozzo (USPS-RT-5)

Autobiographical Sketch

My name is A. Thomas Bozzo. I am a Vice President with Laurits R. Christensen Associates (LRCA), which is an economic research and consulting firm located in Madison, Wisconsin. My education and experience are described in detail in my direct testimony, USPS-T-12 and USPS-T-46.

1 **Purpose and Scope of Testimony**

2 The purpose of this testimony is to rebut criticisms of the Postal Service's
3 econometric estimates of volume-variability factors for mail processing labor, and
4 of the underlying economic theory and econometric methods, found in the
5 testimonies of witnesses Haldi (VP-T-2), Neels (UPS-T-1) and Roberts
6 (OCAT- 1).

7 Associated with my testimony is the Category 2 Library Reference USPS-
8 LR-L-192, which contains the background material for the analyses reported in
9 this testimony. The accompanying CD-ROM contains electronic versions of the
10 econometric estimation code and data used for the analyses presented herein.

11

1 I. Dr. Haldi Mischaracterizes Economic Cost Theory Pertaining to
2 Economies of "Scale" and the Treatment of Non-Volume-Variable Costs.

3 I.A. Dr. Haldi's Discussion of Economies of "Scale" and "Density"
4 Mischaracterizes the Relevant Economic Theory and the Postal Service
5 Models and Should Be Disregarded.

6 I.A.1. Dr. Haldi Admits that Cost Elasticities are an Appropriate Aim of the
7 Analysis.

8 In large part, Dr. Haldi's criticism of the Postal Service models as failing to
9 provide information on "economies of scale" is beside the point of the analysis.
10 The primary purpose of the analysis is to measure cost elasticities required to
11 implement the mail processing volume-variable cost calculations for the sorting
12 cost pools that are the subject of the analysis. USPS-T-12 at 33. Dr. Haldi
13 agrees that cost elasticities are, indeed, inputs to volume-variable costs. Tr.
14 23/8624. I do not, for that matter, actually claim that the elasticities I measure
15 provide information on economies of "scale," though as discussed below, they do
16 bear on the related concept of economies of "density."

17 I.A.2. Dr. Haldi's Claim that Cost Elasticities Provide Little Information on
18 the Presence of "Scale Economies" Is Incorrect.

19 Central to Dr. Haldi's discussion of "scale" economies is the assertion that
20 the Postal Service mail processing variability models specifically are unable to
21 provide much information on the presence or absence of "scale" economies in
22 sorting operations. VP-T-2 at 17-31. Dr. Haldi's claim is inconsistent with the
23 relevant economic theory, which provides that considerable information regarding

1 scale economies may be obtained from cost functions, or related factor demand
2 functions.

3 When there exist economies of scale, an expansion of the firm's inputs
4 lead to a proportionally larger increase in output. Or, equivalently, a given
5 increase in output can be achieved with a less than proportionate increase in
6 inputs. The connection to cost elasticities follows directly from the fact that if
7 inputs increase less than proportionately with a given output increase, costs (i.e.,
8 of the inputs) will also increase less than proportionately. Robert G. Chambers,
9 Applied Production Analysis, Cambridge University Press 1986, p. 71-72.

10 Dr. Haldi attempts to suggest that the connection between cost elasticities
11 (or economies of "size") and economies of scale is limited to certain special
12 conditions. Tr. 23/8625-8626. Dr. Haldi misreads Prof. Chambers's monograph
13 in reaching this conclusion. The conditions Dr. Haldi mentions (cost
14 minimization, "homotheticity" of the cost function¹) are conditions under which
15 scale and size economies coincide *exactly*. Response to USPS/VP-T2-13, Tr.
16 8601-8602. Prof. Chambers notes that, as a rule, economies of size are of
17 greater interest because firms' cost responses to changes in output are more
18 important than considering the response of output to input combinations that
19 need not result from the firm's decision processes. Robert G.
20 Chambers, op. cit., at 74.

21

¹ It should be noted that many functional forms commonly used in applied cost analysis, including the Cobb-Douglas, quadratic, and translog, either are homothetic by construction or can be restricted to be homothetic; it is a common and useful assumption for applied analysis.

1 As I noted above, the labor demand analysis bears on economies of
2 "density" rather than economies of scale. In analysis of network industries,
3 economies of "density" distinguish the cost effects of increasing outputs from
4 those of increasing both outputs and the network served by the firm. The
5 concept is germane to analysis of Postal Service costs because it must serve
6 delivery points that are growing steadily with population, while mail volumes have
7 been relatively flat.

8 Dr. Haldi seems to consider it surprising that there could be economies of
9 "density" for large and small facilities alike (response to USPS/VP-T2-15; Tr.
10 23/8605-8606), but this is in fact no surprise. It would be expected that facilities
11 of all sizes would have operations that are not operating exactly at capacity, so
12 that marginal increases in volume would spread non-volume-variable costs (or,
13 more generally, less-than-fully volume-variable costs) over a larger output base.
14 This point has long been emphasized by the Postal Service's operations
15 testimony. It is, in fact, not unlike observing that an airline can lower its average
16 costs by filling otherwise-empty seats on both a 150-seat jet and on a 400-seat
17 jumbo. The potential existence of economies of density is not, in this respect,
18 dependent on the scale of operations.

19 **I.A.3. Dr. Haldi's Claim that the Postal Service Models Omit Facility Size**
20 **Variables is False**

21 An especially curious claim Dr. Haldi makes is:

22 [U]ntil witness Bozzo either disaggregates and analyzes his data
23 according to plant size, **or introduces explicit variables for plant**
24 **size**, inferences on cost elasticities developed by witness Bozzo

1 are not likely to provide insight on quantities such as scale
2 elasticities. Response to USPS/VP-T2-14(b), Tr. 23/8604;
3 emphasis added.

4 Technically, Dr. Haldi is incorrect to suggest that it is necessary to incorporate
5 plant size measures or to conduct a disaggregated analysis to measure the
6 elasticity of size, or to obtain insight into "scale" economies from it. However, this
7 is secondary to the issue that Dr. Haldi has criticized models with which he is
8 evidently not familiar.

9 Asked what he would consider to be variables representing plant size, Dr.
10 Haldi agreed that measures of capital stock, capital input, and/or the delivery
11 network could serve as plant size variables. Tr. 23/8629-8630. Dr. Haldi,
12 therefore, seems to have failed to notice that the Postal Service labor demand
13 models actually include *both* capital and delivery point variables as plant size
14 measures. USPS-T-12 at 52, 53 (equation 16), and 54 (equation 17). For that
15 matter, Dr. Neels's and Prof. Roberts's models also include what Dr. Haldi
16 considers facility size measures of some sort. Response to USPS/UPS-T1-5, Tr.
17 23/8467; OCA-T-1 at 19. There could exist labor demand models subject to Dr.
18 Haldi's critique, but my models and those of the intervenor witnesses are not
19 among them.

20 **I.B. Dr. Haldi's Theories of Setup Costs Have Negligible Bearing on Costs**
21 **for CRA Subclass Categories.**

22 Dr. Haldi describes at some length theories according to which he claims
23 that *some non-volume-variable setup and take-down costs* in sorting operations
24 may constitute incremental costs for certain classes of mail and other product

1 categories. VP-T-2 at 39-47. Dr. Haldi suggests that, after accounting for non-
2 volume-variable costs that are attributable as incremental costs, the Commission
3 could in principle find itself with similar results to the present distribution of costs
4 under the Commission's 100 percent volume-variability assumption. *Id.* at 55.

5 Dr. Haldi's argument fails for several interrelated reasons. First, the setup
6 costs clearly are not volume-variable (i.e., "attributable" as marginal costs).
7 Second, a significant portion of the setup costs Dr. Haldi discusses cannot be
8 assigned to any class of mail as incremental cost, and even those costs that may
9 be class-specific are not, in general, the incremental costs of any subclass.
10 Thus, methods intended to distribute pools of volume-variable cost to subclasses
11 in order to represent marginal costs will have little application to these non-
12 volume-variable costs. Finally, it should be noted that the Postal Service
13 incremental cost model includes "inframarginal" variable costs, so the possibility
14 that setup costs may represent costs that may vary with volume in some
15 respects, but not "on the margin," is already incorporated in the incremental cost
16 estimates.

17 **I.B.1. Setup Costs are Not Marginal Costs, and a Significant Portion of**
18 **Setup Costs is "Fixed," Particularly in Incoming Schemes.**

19 Witness McCrery noted that sort schemes tend not to vary with volumes
20 on the margin:

21 [E]ven if volume declines, perhaps due to a rate increase, all of the
22 sort schemes must still be run. This results in what[witness
23 Kingsley, Docket No. R2000-1, USPS-T-10] calls the "schemes
24 effect". This effect is, in my judgment, a major reason why

1 workhours commonly vary less than volume... in individual mail
2 processing operations. USPS-T-42 at 35, lines 22-26.

3 Witness McCrery further notes that:

4 Out of the hundreds of schemes run each day, a few very large
5 schemes (e.g., the initial outgoing and incoming schemes, i.e., the
6 "primaries") may be run on multiple sorters due to time constraints.
7 But for the vast majority of schemes, this is neither necessary nor
8 desirable. *Id.* at 36, lines 11-14.

9 Witness McCrery's account explains why scheme change time should not be
10 considered volume-variable to any appreciable degree. Small changes in
11 volume on the margin are insufficient to require the addition or elimination of
12 scheme runs. Dr. Haldi agrees that large incremental changes in volume would
13 be necessary to add or eliminate schemes. Response to USPS/VP-T2-19, Tr.
14 23/8613. Dr. Haldi also correctly counsels that care should be taken not to
15 confuse volume-variable costs with incremental costs such as inframarginal
16 variable costs. Response to USPS/VP-T2-19, Tr. 23/8612-8615. Thus, scheme
17 changes are not appropriately considered to be marginal (i.e., volume-variable)
18 costs.

19 Witness McCrery shows, further, that many schemes, notably incoming
20 secondary schemes (e.g., delivery point sequencing) are very rarely run on
21 multiple sorters. Response to MPA-ANM/USPS-T42-22(d)-(e), Tr. 11/2895-
22 2897. In such cases, the setup costs are "fixed" with respect to "inframarginal"
23 volume changes as well as small changes on the margin. Even in cases where
24 schemes are run on multiple machines, avoiding the full setup cost would require
25 eliminating all volumes from the scheme, so a portion of those costs are
26 appropriately considered "fixed" as well.

1 As I explain below, the Postal Service incremental cost model
2 appropriately incorporates inframarginal variable costs in the incremental cost
3 estimates, and the "fixed" costs are generally not part of any subclass
4 incremental costs.

5 **I.B.2. The Postal Service's Incremental Cost Model Appropriately Accounts**
6 **for Inframarginal Variable Costs.**

7 Certainly, a portion of setup costs and other non-volume-variable mail
8 processing costs may represent what may be called "inframarginal" variable
9 costs—that is, costs which may vary given some incremental change in volume
10 that is more than unit change (marginal cost, literally) but less than the entire
11 product volume (as in "intrinsic" costs). Dr. Haldi counsels care in distinguishing
12 marginal, inframarginal, and "intrinsic" costs. Response to USPS/VP-T2-19, Tr.
13 23/8614-8615. In fact, witness Pifer's incremental cost model incorporates
14 inframarginal costs via a constant-elasticity approximation to component cost
15 functions. USPS-T-18 at 8; see also Docket No. R2000-1, USPS-T-22. Witness
16 Pifer's treatment is conceptually correct and clearly superior to forcing activities
17 with non-volume-variable (but also not totally "fixed") costs into volume-variable
18 cost pools.

19 **I.B.3. In "Class-Specific" Schemes, "Fixed" Setup Costs Are Not**
20 **Attributable To Subclasses as Incremental Costs; Mixed-Class Schemes**
21 **are Not Attributable at the Class or Subclass Level.**

22 Dr. Haldi makes some effort to distinguish schemes that may be class-
23 specific with schemes in which classes of mail are routinely merged. See, e.g.,

1 VP-T-2 at 43-47. However, in neither case are the "fixed" costs appropriately
2 considered "intrinsic" costs at the subclass level, and in the case of schemes
3 where classes of mail are merged, there is no basis for attribution as incremental
4 costs even at the class level.

5 If the setup costs are "fixed" (i.e., avoidable only if the entire scheme is
6 eliminated), then it is necessary to withdraw all volume from the scheme in order
7 for the setup costs to be avoided. But since even "class-specific" schemes
8 generally merge significant volumes of mail from multiple subclasses, eliminating
9 the total volume of mail from any subclass will not be sufficient to eliminate the
10 scheme. Where the setup cost is not avoidable with the (hypothetical)
11 withdrawal of the subclass, it cannot be considered to be part of the subclass
12 incremental cost. Response to USPS/VP-T2-23b, Tr. 23/8622.

13 When multiple classes are merged in a scheme, the setup costs are not
14 incremental costs at the class level, either. In such cases, even the elimination
15 of the volume of an entire class of mail will be insufficient to lead to avoidance of
16 the setup costs. Response to USPS/VP-T2-22, Tr. 23/8620. The costs are
17 "institutional costs" without a causal basis for assignment to class or subclass.

18 **I.B.4. Dr. Haldi's Concerns are Moot in Key Outgoing Operations Using**
19 **Postal Service Variabilities.**

20 Dr. Haldi agrees that his concerns are mooted by unit variabilities – in
21 such cases, the affected operations have no non-volume-variable costs to deal
22 with. Response to USPS/VP-T2-21; Tr. 23/8619. While Dr. Haldi means to
23 suggest that the Commission's assumptions make the incremental cost

1 assignment problems go away, his comment conceivably applies to any
2 variability method. In fact, in many of the operations where Dr. Haldi stakes his
3 case, the Postal Service variabilities are statistically 100 percent, notably
4 outgoing BCS and AFSM 100 operations.

5 Conversely, significant non-volume-variable costs appear in automated
6 incoming BCS sorting, where the evidence suggests that the setup costs are
7 predominantly "fixed" (see witness McCrery's response to MPA-ANM/USPS-T42-
8 22, op. cit.) and the routine mixing of classes implies that the setup costs are not,
9 in fact, incremental to any subclass or class.

10 **I.B.5. Non-Volume-Variable Costs in Sorting Operations are Insufficient to**
11 **Change the Outcome of Class-Level Incremental Cost Tests.**

12 Dr. Haldi fails to show, and indeed cannot show, that even assigning the
13 entirety of non-volume-variable costs in sorting operations to a particular class of
14 mail – let alone the subset of setup costs that might actually be caused by a
15 class of mail as intrinsic costs – would affect the outcome of the affected class-
16 level incremental cost tests. In the Postal Service method, the total non-volume-
17 variable cost in sorting operations totals \$721 million. In contrast, the difference
18 between First-Class Mail revenue and incremental cost is \$18,891 million and
19 that between Standard Mail revenue and incremental cost is \$10,240 million,
20 according to Dr. O'Hara. (USPS-T-31 at 19, 28, 30.)

21 Adding the entire non-volume-variable cost to either First-Class Mail or
22 Standard Mail, which as discussed above would be grossly inappropriate, the
23 incremental cost tests would still show no cross-subsidy. As a practical matter,

1 the magnitudes of non-volume-variable costs in sorting operations are insufficient
2 to lead to problems even if Dr. Haldi's arguments are given maximum credence.
3 At best, Dr. Haldi describes a theoretical problem that careful analysis shows not
4 to have any practical significance for the ratemaking scheme's cost tests.
5

1 **II. Major Errors Lead Dr. Neels's Analysis of IOCS Activity Data for MODS**
2 **Cost Pools to Greatly Overstate The Possibility of Clocking Errors in**
3 **Sorting Operations.**

4 Dr. Neels presents partial results from a crosswalk of clerk and mail
5 handler activities as recorded in IOCS with MODS cost pools, which he purports
6 to show a "serious problem" of "workers clocked into the wrong sorting
7 operation." UPS-T-1 at 15, esp. Table 3. However, Dr. Neels's IOCS analysis is
8 faulty in both the calculations and interpretation of the results. The shortcomings
9 of Dr. Neels's analysis includes failure to include several significant IOCS
10 activities needed to ensure consistency between the IOCS activities and MODS
11 cost pools, and inappropriately interpreting the presence of other activities that
12 are legitimate components of the cost pools as indicative of misclocking. I show
13 below that a correct reading of the IOCS data shows the IOCS and MODS
14 operations to be substantially in accord with each other.

15 **II.A. Dr. Neels Admits to Mistakenly Omitting Several Important Operations**
16 **from His Analysis.**

17 Dr. Neels intended his analysis to show inconsistency of IOCS activities
18 and MODS cost pools for the operation groups used in the econometric variability
19 analysis. Tr. 23/8543. However, his analysis failed to record several major
20 activities as being correctly clocked: MPBCS activities in the D/BCS cost pool
21 (which encompasses MPBCS and DBCS operations), LIPS activities in the SPBS
22 cost pool (which encompasses SPBS and LIPS operations), and "allied labor" for
23 collection mail, such as dumping containers and culling mail (a component of the

1 Cancellation cost pool). Response to USPS/UPS-T1-6(a)-(f); Tr. 23/8470-8471.
2 Tallies for these IOCS activities appeared in Dr. Neels's Table 3 as representing
3 "Non-Sorting Activities," which the Table 3 title implies (incorrectly) represent
4 clocking problems, even though the activities are actually consistent with the
5 clocked sorting operation. Dr. Neels admits that the correct treatment of these
6 tallies would regard them as being consistent with the clocked operation.
7 Response to USPS/UPS-T1-6(g)-(h); Tr. 23/8470-8472.

8 **II.B. Dr. Neels's Analysis Inappropriately Implies Certain "Overheads" and**
9 **Incidental Other Activities Constitute Clocking Errors.**

10 In addition to the IOCS activities Dr. Neels failed to correctly treat as part
11 of the same sorting operation as the MODS cost pool, Dr. Neels's Table 3 also
12 inappropriately implies a variety of other IOCS "non-sorting" activities are
13 emblematic of clocking problems. This is not a correct interpretation of the data.

14 As I explained in my direct testimony, the MODS cost pools include a
15 certain amount of labor hours in "overhead" activities (mainly breaks and clocking
16 in or out), "quasi-allied labor," and incidental "administrative" activities. USPS-T-
17 12 at 26-27.

18 **II.C. A Corrected Analysis Shows MODS and IOCS Sorting Activities to be**
19 **Largely Consistent.**

20 To show the actual degree of consistency between MODS and IOCS, I
21 corrected Dr. Neels's major errors, discussed above. I also correctly classified
22 certain other tallies indicating a sorting or cancellation activity as relating to the

1 appropriate sorting activity in some cases where Dr. Neels's code allowed those
2 tallies to revert to the non-sorting activity categories.

3 The corrected data for sorting activities are shown in Table 1, below. The
4 IOCS sorting activity is fully consistent (*i.e.*, same activity) with the MODS cost
5 pool for 93 percent of the sorting activity tallies. It should be noted that Dr.
6 Neels's presentation of the data, apart from the errors requiring correction, does
7 not show that the largest cost pools have relatively high fractions of tallies where
8 the sorting activity is consistent with the MODS cost pool.

9 **Table 1. Comparison of MODS and IOCS Activity Responses**
IOCS Activity

MODS Cost Pool	Same Activity	Related Sorting Activity	Other Sorting Activity	% Same or Related Activity
D/BCS	1,335,160	27,400 /1	16,298	99%
OCR	141,877	43,227 /1	3,398	98%
AFSM/100	483,935	19,924 /2	11,382	98%
FSM/1000	190,042	13,290 /2	7,732	96%
SPBS	512,581	13,072 /3	33,715	94%
Manual Flats	212,092	13,364 /4	4,232	98%
Manual Letters	828,276	30,774 /4	13,559	98%
Manual Parcels	55,934	16,321 /4	3,789	95%
Manual Priority	187,794	30,008 /4	11,068	95%
Cancellations	247,574	-	11,209	96%
Total	4,195,265	207,380	116,384	97%

10 Notes:

- 11 1/ Other automated letter sorting
12 2/ Other automated flat sorting
13 3/ Other mechanized package sorting
14 4/ Other manual piece sorting

15 It was clear from the data underlying Dr. Neels's analysis that tallies for
16 "Other sorting activities" were concentrated in related activities – e.g., automated

1 equipment handling the same shape of mail.² Taking this into account further
2 narrows the scope of potential misclocking problems – there is no evidence from
3 IOCS that it is necessary to consider the presence of significant hours
4 misclocked to operations unrelated to the MODS cost pool. It should be noted
5 that IOCS, while generally reliable, is not a totally error-free data system, and any
6 inaccuracies would contribute to the anomalies. Regardless of the cause, Dr.
7 Neels's analysis clearly exaggerates the extent of clocking anomalies.

8 **II.D. IOCS "Administrative" Tallies in MODS Mail Processing are Not**
9 **Problematic.**

10 As an entrée to his discussion of purported MODS clocking errors, Dr.
11 Neels cites past controversies regarding the appropriate treatment of MODS mail
12 processing tallies with IOCS "administrative" operation codes. UPS-T-1 at 14.
13 The Commission has been treating the costs associated with certain IOCS tallies
14 as representing general administration rather than as mail processing-related
15 administration, based in part on the testimony of UPS witnesses that the
16 "traditional" assignment of clerk and mailhandler costs to the Cost Segment 3
17 components should be retained.

18 While Dr. Neels suggests that a similar treatment might still be warranted
19 in this proceeding, he not only fails to provide any evidence that the traditional
20 treatment is warranted for administrative tallies in "Function 1" operations, but in
21 fact he admits that various administrative activities are defined such that it is not

² In some cases, IOCS data collectors may indicate a consistent category in the remarks rather than in the selected option; I considered such tallies "related activities" for the purposes of this analysis.

1 at all surprising to encounter them in mail processing operations. Response to
2 USPS/UPS-T1-28, Tr. 23/8510; see also Tr. 23/8548-8551. In fact, as will be
3 shown below, the great majority of "administrative" tallies fall within a subset of
4 MODS operations expressly defined for administrative and miscellaneous
5 activities. The remainder occur in mail processing operations in a manner
6 consistent with infrequent, incidental incurrence. This should satisfy the
7 Commission's indication, expressed in Docket No. R2000-1, that the Postal
8 Service should provide evidence to link the tallies to mail processing operations.
9 PRC Op., Docket No. R2000-1, at ¶3014.

10 **II.D.1. The Small Fractions of "Administrative" Tallies in Sorting Operations**
11 **are Not Unexpected.**

12 In the MODS sorting operations covered by the econometric variability
13 analysis, tallies with "administrative" operation codes constitute a small fraction of
14 costs. Most of those are associated with clocking in or out activities, which IOCS
15 processing assigns activity code 6522 and an administrative operation code
16 regardless of the clocked-in MODS operation.³ Dr. Neels agrees that clocking in
17 and out is a component of the sorting operations. Response to USPS/UPS-T1-6,
18 Tr. 23/8470-8472; Response to USPS/UPS-T1-27, TR. 23/8508-8509. The
19 remaining costs associated with administrative tallies in sorting operations are
20 0.7 percent of the total pool costs. The correct disposition notwithstanding, Dr.

³ The traditional treatment of clocking in and out costs in Cost Segment 3.1 assigned portions of the costs back to the mail processing and window service components to correctly reflect the causation of those costs.

1 Neels agrees that these costs are insignificant. Response to USPS/UPS-T1-27,
2 Tr. 23/8508-8509; Tr. 23/8552.

3 It should be recognized that the nature of many "administrative" activities
4 is such that they actually would be incurred, in small amounts, in mail processing
5 operations including sorting operations. Activities included in the IOCS
6 "administrative" category include "Data Collection & Processing Activities...
7 Training, Quality Control/Revenue Protection... [and] Union Business" (text of
8 IOCS Question 18B, "Operational Area," USPS-LR-L-9), any of which may be
9 observed in small amounts for correctly clocked mail processing employees.
10 Therefore, these should not be viewed as emblematic of clocking problems.⁴

11 **II.D.2. The Vast Majority of "Administrative" Tallies are in MODS Operations**
12 **Expressly Defined for Mail Processing Administration.**

13 In the MODS system, a number of operations are defined expressly for
14 administrative and miscellaneous activities. It should not be at all surprising that
15 the bulk of the mail processing tallies with "administrative" operation codes
16 appear in those operations. Dr. Neels agreed that administrative tallies would be
17 expected in those operations. Response to USPS/UPS-T1-28, Tr. 23/8510.
18 However, he evidently was not aware of the extent to which the tallies were
19 concentrated in those operations, as he opined that the fraction of tallies in those

⁴ Dr. Neels raises the issue of why the employees do not re-clock into other operations in his response to USPS/UPS-T1-4(d) (Tr. 23/8465). He answers his own question subsequently by observing the fairly substantial clocking in and out costs incurred by the Postal Service, response to USPS/UPS-T1-27, (Tr. 23/8509); having employees re-clock for very small amounts of incidental "administrative" activities would be costly and inefficient.

1 operations was lower than 73 percent (Tr. 23/8551), which is the actual fraction,
 2 as shown in Table 2, below. This should not be taken as a ceiling on the fraction
 3 of correctly assigned administrative tallies. The list of operations in Table 2 was
 4 selected for clarity of the operation names, and excludes operations that would
 5 have significant "administrative" components, for example mail acceptance
 6 operations and dock expediter work, both of which involve administrative tasks
 7 such as record-keeping.

8 **Table 2. IOCS "Administrative" Tallies for Select Operations, BY 2005.**

Op Code	Operation Description	Admin tallies (\$000), excluding a/c 6522
340	STANDBY - MAIL PROCESSING	4,185
341	QWL COORDINATOR - NONSUPER EMPS	2,262
547	SCHEME EXAMINERS	8,127
554	OFFICE WORK & RECORDS-MAIL PROC	71,454
555	OFFICE WORK & RECORDS-MAIL PROC	19,001
560	MISC ACTIVITY-MAIL PROC	30,755
561	MISC ACTIVITY-MAIL PROC	7,600
562	MISC ACTIVITY-MAIL PROC	5,722
563	MISC ACTIVITY-MAIL PROC	9,191
564	MISC ACTIVITY-MAIL PROC	7,296
577	PREP & VERIFY DELV BILLS-INTERNAT	410
607	STEWARDS - CLERKS - MAIL PROC	46,304
612	STEWARDS-MAIL HANDLER-MAIL PROC	19,778
630	MEETING TIME-MAIL PROC	5,177
677	ADMIN & CLER - PROCESSING & DISTRIB	30,637
681	ADMIN & CLER - PROC & DIST INTERNTL	1,986
697	ADM & CLER-MAIL.REQ & BUS.MAIL ENT	4,998
	Subtotal Above Operations	274,883
	Total MODS Mail Processing	
	"Administrative" Tallies	377,113
	Percent in listed MODS operations	73%

1 **II.D.3. The "Administrative" Tallies are Appropriately Included in Cost**
2 **Segment 3.1.**

3 Given that a large majority of IOCS "administrative" tallies in MODS mail
4 processing operations specifically are associated with mail processing, and
5 indeed all are incurred at mail processing facilities, the Commission should
6 determine that there is sufficient evidence to consider these costs as part of the
7 mail processing component, consistent with the Postal Service treatment, rather
8 than as general administrative costs in Cost Segment 3.3.

9

1 **III. Dr. Neels Greatly Overstates the Extent of MODS Data Problems.**

2 Dr. Neels raises an array of claimed MODS data problems as obstacles to
3 implementing a MODS-based volume-variability analysis (UPS-T-1 at 15-20),
4 even as Prof. Roberts has instead pursued robust econometric methods that
5 allow him to recommend some MODS-based econometric variability models.
6 OCA-T-1 at 52. In this proceeding, Dr. Neels has pursued analyses which seem
7 to suggest that the Postal Service data for automated operations is no better
8 than, if not actually worse than, its data for manual operations. UPS-T-1 at 22-
9 23. This result is not only counterintuitive, considering that MODS workload
10 measurement processes for automated operations employ machine counts that
11 are reliable in principle, but as witness Oronzio points out, directly counter to the
12 experience of Postal Service field managers and operations experts. USPS-RT-
13 15 at 10-12.

14 Dr. Neels's effort to cast every conceivable MODS data anomaly as a fatal
15 error contradicts his previous testimony, in particular that from Docket No. R97-1,
16 where Dr. Neels criticized Prof. Bradley for eliminating too many "usable"
17 observations from his samples. Docket No. R97-1, UPS-T-1 at 46; Tr. 28/15632.
18 Dr. Neels also depends on a variety of misinterpretations and misuses of the
19 MODS data. In particular, Dr. Neels's analysis conflates conceptual definitions of
20 MODS measures with the actual measurement methods, conducts screens that
21 defeat the purpose of pooling MODS operations, and ignores whether the
22 claimed anomalies are relatively small or relatively large. As such, Dr. Neels's

1 own present handling of anomalies falls squarely in the sights of his earlier
2 critiques of the Postal Service. The cumulative effect is to greatly overstate the
3 econometrically relevant MODS data issues.

4 **III.A. Dr. Neels's Current Testimony is Inconsistent With His Past Approach**
5 **to MODS Data "Anomalies."**

6 Dr. Neels's Docket No. R97-1 criticism of Prof. Bradley's models, in
7 criticizing both what he considered to be excessive data screening and a failure
8 to deal with measurement error in MODS piece handlings (Docket No. R97-1,
9 UPS-T-1 at 22; Tr. 26/15608; p.26-27, Tr. 27/15612-15613), did at least point
10 towards a reasonable general approach to handling the MODS data.⁵
11 Specifically, Dr. Neels's earlier testimony could have been read as appropriately
12 suggesting that researchers should tread lightly on data that are merely
13 "anomalous," and should use appropriate econometric techniques to deal with
14 unavoidable measurement errors. This is basically the method Prof. Roberts and
15 I have adopted in our respective studies. Prof. Roberts notes that it is important
16 to eliminate gross data errors where they may be identified (response to
17 USPS/OCA-T1-38, Tr. 23/8372), but also notes the considerable utility of the
18 instrumental variables technique for dealing with issues such as measurement
19 error in MODS FHP. Roberts 2002 at 55.

20 Dr. Neels's current analysis of the MODS data suggests he has discarded
21 his original data screening philosophy. The proof is in Dr. Neels's failure to

⁵ Many of the specific details of Dr. Neels's critique were wanting; see Docket No. R2000-1, USPS-RT-7 at 14-26 (Tr. 46E/22049-22061).

1 discern the magnitudes of certain potential errors (response to USPS/UPS-T1-
2 11, Tr. 23/8484), or to determine whether others even represented errors at the
3 level of analysis employed in Dr. Neels's or the Postal Service models.
4 Response to USPS/UPS-T1-9, Tr. 23/8479. Indeed, Dr. Neels's goal seems to
5 be to label as many erroneous observations he can, and to throw up his hands at
6 the mysteries of the MODS data. Tr. 23/8568-8572. This contrasts with Prof.
7 Roberts's approach, which eliminates some erroneous data but in which data
8 issues ultimately are not insurmountable obstacles to recommending MODS-
9 based models.

10 **III.B. Dr. Neels's Critiques Fail to Correctly Account for MODS Measurement**
11 **Methods.**

12 While it is common to discuss MODS as a monolithic system, the MODS
13 system uses separate measurement systems for its key data elements:
14 workhours are derived from clock rings, automated TPF and TPH are derived
15 from piece counts on the sorting equipment, FHP are weighed and converted to
16 pieces, and manual TPH are projected from FHP and mail downflows. It is
17 possible for data "anomalies" to arise solely from the differences in measurement
18 methods between the various systems. Tr. 23/8473.

19 Dr. Neels's screens comparing automated TPF and TPH with FHP
20 inappropriately exploit these differences. Since the respective measurement
21 systems are independent, the screens cannot discern anomalies that are
22 byproducts of the FHP conversion process from actual data collection errors.
23 Nor did Dr. Neels make any effort to examine the anomalies for evidence of

1 actual data collection errors. Response to USPS/UPS-T1-7, Tr. 23/8473-8474.
2 Dr. Neels turns to the conceptual definition of TPF (and TPH) in terms of FHP
3 and subsequent handlings as a defense of his methods (response to USPS/UPS-
4 T1-7(e), Tr. 23/8474), but this is not availing. As Prof. Roberts correctly notes,
5 because FHP and TPF are measured independently, the conceptual definition
6 will not hold as an inequality. Response to USPS/OCA-T1-19, Tr. 23/8326.
7 Accordingly, some "anomalies" will arise solely due to the FHP weight
8 conversions.

9 Screening with FHP is particularly inappropriate as a basis for criticism of
10 the Postal Service models, which use the machine-counted TPF where available.
11 Since the FHP and machine counts are independently determined, there is no
12 prior reason to believe that FHP conversion errors would indicate errors in the
13 automated systems that provide automated TPF and TPH counts. Indeed,
14 avoiding the need to account for the effects of weight conversion on FHP is a
15 significant reason for preferring the machine-counted workload data.

16 **III.B.1. Some of Dr. Neels's Screening Criteria, Perversely, Identify More**
17 **Anomalies When the Errors are Relatively Small.**

18 Dr. Neels's TPH-FHP and TPF-FHP screens also have the perverse
19 feature that in operations where TPH and FHP should be relatively close,
20 relatively small errors in the FHP conversions will trigger the identification of
21 more "anomalies" by Dr. Neels's criteria. Certain operations, such as those in
22 the OCR cost pool, generally are the first sorting operations for pieces processed
23 therein. Furthermore, the successfully processed pieces are generally handled

1 in other operations for subsequent handlings (*i.e.*, D/BCS operations, in the case
2 of successfully OCR'ed letters). Since true TPH and FHP are nearly equal in
3 such operations, relatively small overestimates of FHP in the conversion process
4 will trigger "anomalies" of the sort identified by Dr. Neels.

5 Dr. Neels agrees that operations where actual TPH and actual FHP are
6 close will be more susceptible to the identification of anomalies according to his
7 screens. Tr. 23/8556. In fact, in the limit where true TPH and FHP were equal,
8 and the conversion factors were accurate on average, Dr. Neels admits that his
9 screening procedures would identify half the observations as anomalous.
10 Response to USPS/UPS-T1-36, Tr. 23/8528. Indeed, Dr. Neels's screen
11 identifies the most FHP-TPH anomalies in the OCR operation, some 38 percent
12 of observations. UPS-T-1 at 18. Particularly given the use of instrumental
13 variables estimation procedures that are robust to measurement error from the
14 FHP conversion process, there is no reason at all to consider those anomalies to
15 constitute observations that are unusable for estimation. This screen is clearly
16 inconsistent with Dr. Neels's approach to minor data anomalies in Docket No.
17 R97-1.

18 **III.B.2. Some of Dr. Neels's Screening Criteria Defeat the Purpose of Cost**
19 **Pools.**

20 The MODS cost pools serve two significant and long-acknowledged
21 purposes. They consolidate operations into analytically significant groups of
22 workhours and/or volumes. They also are robust to certain forms of data errors
23 at finer levels of operation disaggregation. When data are booked to operation

1 A, but should have been booked to operation B in the same cost pool, the
2 operation-level data may be in error but the cost pool total will be correct. Dr.
3 Neels agrees. Response to USPS/UPS-T1-11(d), Tr. 23/8484-5. Indeed, in
4 Docket No. R2000-1, Dr. Neels even had attributed some differences in results
5 between his models and the Postal Service models to elimination of certain
6 errors in parcel volumes by aggregation of certain cost pools' data. Response to
7 USPS/UPS-T1-38, Tr. 23/8533.

8 In my direct testimony, I had described anomalies in the data for certain
9 barcode sorting operations that were detected when disaggregated data were
10 provided to Prof. Roberts in Docket No. R2005-1. It had appeared that data were
11 being incorrectly booked between MPBCS and DBCS operations in similar
12 schemes, but the totals over the incoming and outgoing D/BCS cost pool groups
13 were correct. USPS-T-12 at 50, lines 16-21. These issues particularly affected
14 the FHP data. In discussions with MODS staff at Postal Service Headquarters, I
15 was able to determine that incorrectly booked FHP withdrawal transactions were
16 responsible for the observed errors, which indicates that the D/BCS aggregates
17 would be correct.

18 Indeed, Dr. Neels confirmed that rates of negative-FHP errors for D/BCS
19 operations are trivial at the level of the Postal Service cost pools. Response to
20 USPS/UPS-T1-9(c), Tr. 23/8480-81. Dr. Neels actually uses the FHP at even
21 higher levels of aggregation. Despite the indications that the aggregates were
22 correct, Dr. Neels screened the data at sub-cost pool levels that would show
23 more erroneous observations. This is inconsistent with the principle that

1 anomalous but valid observations should be employed for analysis. Again, it is
2 hard to see a purpose to Dr. Neels's screening procedures other than to make
3 the MODS data look bad.

4 **III.B.3. The AP and Weekly Productivity Screens Also Tend to Identify**
5 **Relatively Small Data Errors.**

6 Dr. Neels also identifies as anomalous or erroneous observations in which
7 productivity screens fail for some accounting period or weekly data that make up
8 the quarterly observations. UPS-T-1 at 18, 20 (Tables 4 and 5). The observation
9 that certain errors may be "masked" in aggregated data was a bailiwick of Dr.
10 Neels's in Docket No. R2000-1, and he effectively repeats the criticism here,
11 paying only lip service⁶ to the underlying theoretical point that errors too small to
12 be noticed are unlikely to have material effects on the estimation procedures.
13 USPS-T-12 at 65, lines 6-17.

14 Screening at the weekly frequency, not surprisingly, vastly increases the
15 amount of data that could be in error: behind the 10,304 quarterly observations in
16 the USPS-LR-L-56 data set are 133,952 weekly observations. Given a thirteen-
17 fold increase in observations, even relatively low error rates of a few percent in
18 the weekly observations would lead to the elimination of most of the quarterly
19 data, since it would be expected that most observations would contain at least
20 one bad week. Even Dr. Neels's screening shows that not to be the case.
21 Moreover, an error in weekly data that would, on average, constitute 1/13th of the

⁶ "Not all errors are equally important." UPS-T-1 at 21.

1 quarterly observation would clearly tend to be small relative to an error in the
2 quarterly or even AP data.

3 The main issue is whether the small errors have a material effect on the
4 results. The effects, as I showed, are generally minor, particularly for the letter
5 and flat operations that comprise the vast bulk of the costs under study, and
6 show no evidence of significant bias in any direction.⁷ USPS-T-12 at 97, 99.
7 With the vast majority of the "masked" errors showing no signs of causing actual
8 problems for the estimation procedures, Dr. Neels has again failed to
9 demonstrate that the observations are unusable.

10 **III.B.4. The Use of Robust Estimation Procedures Reduces the Need for**
11 **Screening Based Solely on FHP Conversion Error.**

12 Finally, changes in estimation methods since Dr. Neels's previous
13 testimony make his data screening approach particularly excessive. Unlike the
14 previous proceedings in which the Postal Service models used generalized least
15 squares estimation procedures that may theoretically have been susceptible to
16 errors-in-variables problems, the current models use instrumental variables
17 procedures where indicated.⁸ USPS-T-12 at 86 to 89 (line 4). In particular,

⁷ Manual Priority is the notable exception, but the standard errors of the estimates also increase dramatically for the smaller samples, such that the resulting differences are not statistically significant. The analysis did not seek to locate observations that may have been serving as leverage points.

⁸ Dr. Neels's swipe at Prof. Greene for purportedly failing to predict the effects of introducing instrumental variables estimation (Tr. 23/8512) is misdirected. The qualitative, and many of the quantitative, results of the Postal Service analysis are robust to the introduction of instrumental variables procedures. This is evident even in Prof. Roberts's Table 1, where the "USPS" results use

1 screening based solely on the presence of conversion errors in FHP is
2 unwarranted, since the estimation procedures are intended to be robust to that
3 source of errors-in-variables.

4 **III.C. Errors and Omissions Make Dr. Neels's Analysis of the Postal Service**
5 **Models Highly Misleading.**

6 **III.C.1. Dr. Neels Concedes the Robustness of the Postal Service Models'**
7 **Main Results.**

8 Perhaps intending damnation by faint praise, Dr. Neels opens his
9 discussion of the Postal Service variability models noting:

10 While this latest study [in USPS-T-12] incorporates more recent
11 data, it is based on the same conceptual framework used in the
12 past. Not surprisingly, it has produced substantially the same
13 results. (UPS-T-1 at 9, lines 3-5.)

14 When Prof. Bradley initiated the econometric study of mail processing volume-
15 variability in Docket No. R97-1, the robustness of the Postal Service models was
16 very much in question. The robustness of the models has previously been
17 assessed in very inappropriate ways, for instance by comparing results of
18 statistically rejected econometric estimation approaches with those from
19 appropriate models.

20 Assuming *arguendo* that Dr. Neels were correct as to the unreliability of
21 the MODS data and the major features of mail sorting operations that are
22 supposedly ignored by the Postal Service models, it would be fair to wonder just
23 how the models manage to pull off the trick of consistency. In fact, the problem

instrumental variables estimation even where the Postal Service models do not,
and yield similar results overall. OCA-T-1 at 13.

1 is with Dr. Neels's premises and not the Postal Service models or results. As
2 discussed above, he overstates data quality issues with MODS. As I discuss
3 below, he likewise mischaracterizes the purported failings of the Postal Service
4 models by employing analyses that are biased towards showings of instability.

5 **III.C.2. Dr. Neels's Split Sample Analyses Fail to Demonstrate Truly**
6 **Significant Problems with the Postal Service Results.**

7 Dr. Neels conducts several specification tests purporting to show
8 instability of the Postal Service models over subsamples of regression
9 observations. He interprets the rejection of pooling as indicating flaws in the
10 Postal Service models. UPS-T-1 at 31-36. In this case, his interpretation of the
11 results is not facially wrong, but it is highly misleading.

12 First, Dr. Neels tests the full set of slope coefficients, rather than the
13 specific coefficients that enter the variability formulas. Response to USPS/UPS-
14 T1-13; Tr. 23/8487-8489. As a result, while he bemoans the need to estimate
15 "nuisance parameters" in microeconomic models (response to USPS/UPS-T1-
16 15; Tr. 23/8492), he is happy to conduct tests that exploit them for his ends. His
17 testing procedures allow there to be no significant differences in the parameters
18 that determine the variabilities, but still lead to a "rejection" based on differences
19 in other parameters.

20 More importantly, Dr. Neels's critique conspicuously fails to show that the
21 rejection has significant effects on the quantities of interest, elasticity estimates
22 applicable to cost pools or components applicable to alternative models. Indeed,
23 in the code for his tests of operations with translog models, Dr. Neels did not

1 even compute the elasticities. For example, UPS-WP-1, program WP_Chow_Big
 2 vs Rest.do. This is an especially significant omission for the translog form, where
 3 individual coefficients generally do not have economic interpretations, so
 4 computing elasticities and like quantities is central to interpreting the model
 5 results. Also, if models estimated on subsamples are to be used, the subsample
 6 results need to be combined, for instance, through a weighted averaging
 7 procedure. Response to USPS/UPS-T1-13, Tr. 23/8487-8489. Dr. Neels
 8 confirmed the combined split-sample and weighted results in Table 3, below,
 9 derived from the models Dr. Neels estimated for Table 11 of UPS-T-1. (Id.)

10 **Table 3. Combined Split-sample results Versus Postal Service BY 2005**
 11 **Models, Small vs. Large Plants**

Cost Pool	Variability, "Big Plants" Sub-sample	"Big Plants" Share of FY05 Hours	Variability, "Small Plants" Sub-sample	"Small" Share of FY05 Hours	Weighted Average Variability, Cost Pool	Neels replication of USPS BY05 Variabilities	Difference
OCR	0.72 (0.06)	0.87	0.91 (0.06)	0.13	0.74 (0.05)	0.78 (0.05)	-0.04
FSM 1000	0.74 (0.03)	0.79	0.67 (0.04)	0.21	0.73 (0.02)	0.72 (0.03)	0.01
SPBS	0.87 (0.04)	0.92	0.92 (0.07)	0.08	0.87 (0.04)	0.87 (0.05)	0.00
Incoming D/BCS	0.86 (0.06)	0.83	0.69 (0.07)	0.17	0.83 (0.05)	0.82 (0.07)	0.01
Outgoing D/BCS	1.00 (0.06)	0.89	1.08 (0.05)	0.11	1.01 (0.05)	1.06 (0.06)	-0.05
Weighted Average					0.85	0.86	-0.01

1 Thus, while Dr. Neels's testing procedure was able to generate
 2 "rejections" for his Table 11, the practical effect of splitting the sample and
 3 combining the results is negligible. As a result, he fails to show the existence of
 4 a material problem with the Postal Service models.

5 A similar pattern holds for Dr. Neels's Table 13 analysis, for which he split
 6 the sample between plants with increasing volumes and plants with non-
 7 increasing volumes. Again, Dr. Neels's "rejection" fails to translate into material
 8 changes in the variability results.

9 **Table 4. Combined Split-sample results Versus Postal Service BY 2005**
 10 **Models, "Growing" vs. Other Plants**

	Split-Sample		USPS BY2005		Differences
	Weighted Average				
	V.V.s	S.E.s	V.V.s	S.E.s	
Cost Pool					
OCR	0.84	0.06	0.78	0.05	-0.05
BCS-Incoming	0.84	0.07	0.82	0.07	-0.02
BCS-Outgoing	1.04	0.05	1.06	0.06	0.02
FSM1000	0.71	0.03	0.72	0.03	0.01
SPBS	0.86	0.05	0.87	0.05	0.00

11 **II.C.3. Dr. Neels's Fixed-Effects Analysis Inappropriately Fails to Account**
 12 **for the Statistical Properties of the Estimates.**

13 Dr. Neels presents the results from an analysis of the estimated fixed
 14 effects coefficients from the Postal Service models which, he claims,
 15 demonstrates an "implausible" pattern of relative productivity differences among
 16 sites. He marvels at the results and wonders if there might not be something
 17 "deeply wrong" with the models. UPS-T-1 at 36, line 7, to 38, line 2. When
 18 asked to produce similar results for his alternative model from Section 6 of UPS-
 19 T-1, he reported comparably large ranges of productivities. Response to

1 USPS/UPS-T1-29; Tr. 23/8511-8514. A reasonable question would be whether
 2 there is something deeply wrong with all of the models, or if a more innocent
 3 explanation is available. A correct interpretation indicates the latter.

4 The key consideration is that the estimated fixed effects are statistical
 5 estimates and thus are subject to sampling-type variation. This fact points to one
 6 major problem with Dr. Neels's analysis, which is that he only examined the
 7 extreme (maximum and minimum) values of the effects. Looking at enough
 8 estimated values, such as the 200 to 300 sites' effects in the Postal Service
 9 models, one would expect to see some number of large deviations from the "true"
 10 values of the coefficients solely due to random variation. Not surprisingly, it is
 11 therefore rare to summarize a collection of data using only the extreme values.

12 Dr. Neels's calculations also contribute to the wide measured range.
 13 Since the dependent variable of the labor demand equations is the natural
 14 logarithm of hours, he exponentiates the estimated fixed effects to obtain the
 15 effects in the level of workhours. This is conceptually appropriate. However, Dr.
 16 Neels apparently fails to consider the effects of the exponentiation and
 17 standardizing the results based on extreme values on the sampling variability of
 18 his reported results. These steps have the effect of magnifying large deviations
 19 from the "true" values. This is highly apparent in Table 5, which shows that the
 20 standard errors for Dr. Neels's productivity ratios are high relative to the ratios
 21 themselves.

22

Table 5. Standard Errors of Neels Productivity Ratios

Cost Pool	Median	Max	SE(Max)	Standard Difference
-----------	--------	-----	---------	------------------------

Manual Letter	2.07	5.03	1.07	2.76
Manual Flats	1.95	4.95	0.89	3.37

1 What Dr. Neels has discovered is not a fundamental flaw in the models—
2 the Postal Service models or, for that matter, his own. Rather, he has set up an
3 analysis in which the random variation in the productivity factors is large relative
4 to the productivity differences he is purporting to measure. Thus, his results are
5 driven in no small part by the noise in the coefficient estimates. He would, in
6 fact, have to be “unlucky” not to see a wide range of effects under the
7 circumstances. Consequently, his analysis does not provide a legitimate critique
8 of the fixed-effects models.

9 **III.C.4. Dr. Neels’s Analysis of Instrument Relevance has No Statistical**
10 **Content At All and Must Be Rejected.**

11 Dr. Neels purports to assess the relevance of the instrumental variables
12 employed in the Postal Service models by examining a “partial R-squared”
13 statistic from a regression of the instrumented output variables on the excluded
14 instruments. UPS-T-1 at 30. While he loosely motivates the analysis by citing to
15 a well-known paper⁹ on instrumental variables analysis with “weak instruments,”
16 the referenced paper does not actually propose a test based on the “partial R-
17 squared.” Dr. Neels admitted that the criteria he used to determine whether
18 “weak instruments” might lead to bias in the Postal Service models were not
19 derived from any formal statistical test at all. Response to USPS/UPS-T1-12, Tr.
20 23/8486. As such, it is impossible to evaluate whether the criteria Dr. Neels

⁹ Douglas Staiger and James H. Stock, “Instrumental Variables Regression with Weak Instruments,” *Econometrica* 65(3), 557-586.

1 employed are valid, and the Commission should not rely on Dr. Neels's pure
2 judgment.

3 Moreover, Dr. Neels's judgment did not seem to account for significant
4 features of the paper he cited as they apply to the Postal Service analysis. The
5 Staiger and Stock paper shows, "In contrast to TSLS [two-stage least squares],
6 [the limited information maximum likelihood, or LIML, estimator] rapidly becomes
7 median unbiased" as the instruments become stronger.¹⁰ They described the
8 result as supporting previous observations of small bias in LIML in more narrowly
9 defined circumstances. This is part of the reason why the Postal Service models
10 employ LIML. Dr. Neels agrees that Staiger and Stock distinguished the
11 performance of LIML and TSLS (response to USPS/UPS-T1-12, Tr. 23/8486),
12 but it is impossible to determine whether or how he might have modified his
13 judgment accordingly. Finally, the nature of weak instrument bias is such that
14 were the LIML estimator exhibiting the bias Dr. Neels purports to show, the LIML
15 results should be much closer to the ordinary least squares results than they
16 actually are. USPS-T-12 at 87. Again, Dr. Neels adduces no real problem with
17 the Postal Service instrumental variables models.

18 **III.C.5. Dr. Neels's Analysis of Equipment Deployments Does Not**
19 **Demonstrate a Simultaneity Problem.**

20 As part of a discussion that of changes over time to Postal Service
21 operations, Dr. Neels presents results of a logit model that purports to show a

¹⁰ Staiger and Stock, moreover, modeled instrument "weakness" as nearly zero correlations between the instruments and endogenous variables.

1 relationship between volumes and equipment deployments. UPS-T-1 at 42-43.
2 Asked to describe the structural model of equipment deployment underlying his
3 analysis, he deprecated his own analysis saying it "is not intended to describe a
4 fully-articulated model of technology deployment" (response to USPS/UPS-T1-
5 34(a), Tr. 23/8524), which is an understatement.

6 It does not take a fully-articulated model of technology deployment to
7 understand that Postal Service managers do not simultaneously juggle the mail
8 they need to process and the equipment needed to process it. Rather,
9 equipment deployments are determined well in advance of the actual operational
10 use of the equipment. My understanding is that achieving a threshold return on
11 the Postal Service's investment is among the criteria that interacts with
12 deployment decisions, and obtaining that return with the mail processing
13 equipment Dr. Neels considers involves achieving marginal cost reductions
14 applied to sufficiently large volumes of mail. Observing large, expensive, high-
15 capacity pieces of sorting machinery at large plants does not indicate that capital
16 and volumes are simultaneously determined, it simply suggests that Postal
17 Service planners are rational in deciding where to put equipment.

18

1 **IV. Dr. Neels's Alternative Model, Correctly Applied, Supports the Postal**
2 **Service Variability Results.**

3 Dr. Neels advances the alternative model he presents in Section 6 of
4 UPS-T-1 (pages 49-54) as a "plant-level" alternative to the Postal Service
5 models. As implemented it is not truly a "plant-level" model, but instead an
6 aggregated model of the sorting operations covered by the Postal Service
7 analysis. *Id.* at 49, lines 14-15.

8 As I discuss below, as a model of sorting operations, Dr. Neels's
9 alternative model is highly inappropriate. It abandons, without good cause, the
10 shape-based processing structure that characterizes both actual Postal Service
11 operations and the economic frameworks underlying the Postal Service and OCA
12 models. The aggregated structure Dr. Neels proposes totally fails to reflect
13 features of operations, such as cost differences between manual and automated
14 mailstreams, that Dr. Neels admits are characteristics of the operations.
15 Tr. 23/8494-8497. Dr. Neels's operational motivations for his approach to sorting
16 operations do not stand up, and he failed to estimate his models in ways that
17 would have provided direct evidence to support his contentions. In fact, the
18 evidence suggests that the cross-shape and cross-operation effects he describe
19 do not exist to any significant extent.

20 As a model of non-sorting operations, Dr. Neels's alternative model is
21 potentially more useful. I describe below how its structure generally resembles
22 models of "allied labor" operations originally advanced by the Postal Service in
23 Docket No. R97-1. It may also provide an empirical method to estimate overall

1 variability for mail processing plants, though the need to de-average sorting
2 operations would remain. I show below that true "plant-level" versions of Dr.
3 Neels's models generally support the Postal Service variability levels.

4 **IV.A. Dr. Neels's Alternative Model Is Inappropriate for Sorting Operations**

5 **IV.A.1. Dr. Neels's Account of Sorting Operation Activities Does Not** 6 **Suggest Significant Cross-Operation Effects.**

7 Dr. Neels presented an account of sorting operation activities that purports
8 to provide support for his contention that cross-operation and even cross-shape
9 effects must be taken into account in modeling sorting operations. Response to
10 USPS/UPS-T1-2, Tr. 23/8457-8460. Correctly interpreted, Dr. Neels's account
11 shows only minor cross-effects. Indeed, I tested for the presence of certain
12 cross-operation effects and presented results in USPS-T-12 that show them to
13 be insignificant for automated letter and flat operations. USPS-T-12 at 93-95.

14 Discussing the "runtime" activity, Dr. Neels cites the possibility of piece
15 handlings in one cost pool affecting the composition of mail in another, and
16 references the past inclusion of the "manual ratio" variable in the Postal Service
17 models. Dr. Neels admits that this effect, to the extent it is present, primarily
18 operates "within the same shape-based mailstream." Response to USPS/UPS-
19 T1-32(c), Tr. 23/8520. The citation of the mail composition effect that the manual
20 ratio sought to capture does not directly imply cross-operation effects, though.
21 The operational effect to which Dr. Neels alludes stemmed from changes in mail
22 composition within the automated operations as the Postal Service's automation
23 program advanced. The issue was not that manual volumes had a direct effect

1 on automated operations, but rather that the automation operations themselves
2 were expanded to process "harder" mail. The practical utility of the manual ratio
3 was that it proxied composition changes within both the manual and automated
4 operations. While Dr. Neels's interpretation is overly literal, it is subject to the
5 testing showing the absence of cross-operation effects, described above.

6 With respect to container handling costs in sorting operations ("quasi-
7 allied labor" in the USPS-T-12 terminology), Dr. Neels raises the prospect that
8 congestion in the plant might affect the costs. While this might appear to be a
9 potential cross-operation effect at first glance, Dr. Neels fails to consider which
10 traffic would have the largest effect on these particular handlings.¹¹ He also
11 admits that the volume of mail being moved should be the primary determining
12 factor for the container handling labor requirements. Response to USPS/UPS-
13 T1-32(e), Tr. 23/8521. In Postal Service plants, the equipment associated with
14 the mail processing cost pools are located together, and mail slated for
15 subsequent processing (as opposed to mail to be dispatched from the facility;
16 this dispatching work is generally carried out in LDC 17 operations) is typically
17 staged close to the equipment. Thus, much or most of the traffic for Dr. Neels's
18 story will come from the same operation. Again, the presence of effects from
19 other operations is testable.

¹¹ Dr. Neels indicates having only visited one Postal Service mail processing facility, in the course of Docket No. R97-1. Response to USPS/UPS-T1-32(a), Tr. 23/8520.

1 **IV.A.2. Dr. Neels Fails to Demonstrate Cross-Operation and/or Cross-Shape**
2 **Effects, While Inappropriately Failing to Represent Key Patterns of Cost**
3 **Causation.**

4 Despite claiming the presence of significant cross-operation and cross-
5 shape effects, Dr. Neels does not actually demonstrate that such effects exist.
6 Dr. Neels confirms that, in examining shape-level alternatives to his aggregated
7 model, he did not investigate any models directly incorporating cross-shape or
8 cross-operation effects. Response to USPS/UPS-T1-5(b), Tr. 23/8468-8469;
9 response to USPS/UPS-T1-32(d), Tr. 23/8521. Given the prominence Dr. Neels
10 affords those effects in criticizing the Postal Service (and, by extension, OCA)
11 models, not estimating models that would directly confirm the existence of the
12 effects seems to be a major omission.

13 Meanwhile while Dr. Neels agrees that shape and automation
14 compatibility determine how mail is handled and have effects on costs
15 (responses to USPS/UPS-T1-15(e)-(g), 16 19; Tr. 23/8491-8493), yet the
16 aggregation in his models leads him not to account for those factors at all. This
17 contrasts with Prof. Roberts's correct suggestion that representing such cost
18 differences between and within mailstreams motivates models that explicitly
19 account for them. Responses to USPS/OCA-T1-1-2, Tr. 23/8287-8288.

20 Dr. Neels defines his "shape"-level outputs in a manner that somewhat
21 obscures the shape-related mailstreams. He assigns Priority Mail handlings
22 back to shape, and includes all SPBS handlings, including handlings of flat-

1 shape mail bundles, to the parcel category.¹² This treatment would have
 2 negligible effect on the letter FHP output in Dr. Neels's models, since Priority Mail
 3 letters are a relatively small category. Since the details of the non-letter
 4 treatment would not matter much in principle, I therefore estimated a model using
 5 workhours for letter-shape operations incorporating cross-shape effects using Dr.
 6 Neels's FHP measures. Principal results are presented in Table 6, below. As
 7 shown in the table, the sum of the "flats" and "parcels" elasticities is zero. This
 8 contrasts with a combined elasticity of 0.15 (significantly different from zero) in
 9 Dr. Neels's aggregated model. The results show that the plant model is not
 10 directly applicable to the letter-shape operations, and that, whatever the
 11 theoretical merits of Dr. Neels's claims of cross-shape effects, there is no
 12 evidence that they are actually present for letter-shape sorting operations.

13 **Table 6. Results from Letter-Shape Version of Neels Model**

Output	"Plant-level"		Letter-Shape Operations	
	<u>coef</u>	<u>se</u>	<u>coef</u>	<u>se</u>
FHP Letters	0.88	0.04	0.98	0.05
FHP Flats	0.09	0.01	0.01	0.01
FHP Parcels	0.06	0.01	-0.01	0.01
SUM	1.03	0.04	0.98	0.04

14
¹² The issue with this treatment is that most Priority Mail flats processing is outside of "regular" flats operations.

1 **IV.B. Applied to Allied Labor and Broader Plant Labor Hours, Dr. Neels's**
2 **Model Gives Results Consistent With the Postal Service Methods**

3 **IV.B.1. As a Model of Allied Labor Operations, Dr. Neels's Model Is Similar**
4 **To Models Previously Advanced By the Postal Service**

5 As a model of allied labor operations, Dr. Neels's model generally
6 resembles the models advanced by Prof. Bradley in Docket No. R97-1, which
7 related workhours in allied labor cost pools to MODS sorting workloads
8 representing several letter and flat processing mailstreams (Docket No. R97-1,
9 USPS-T-14 at 37-38). Dr. Neels's model measures letter and flat workload as
10 the respective shape-level first-handling pieces, and adds a third workload
11 variable representing parcel and bundle handlings. UPS-T-1 at 50. While Prof.
12 Bradley's models used the translog functional form, Dr. Neels's use of the log-
13 linear functional form in conjunction with fixed effects/instrumental variables
14 estimation methods is reasonable.

15 While some of Dr. Neels's data handling decisions are questionable –
16 including his excessive application of screens designed to identify errors in
17 automated TPF to the FHP data he employs, as discussed above, and allocating
18 Priority Mail handlings to shapes and combining parcel and bundle handlings –
19 the broad outlines of the model are acceptable for the reasons articulated by Dr
20 Bradley in Docket No. R97-1.

21 In the analyses of allied labor and broader plant workhours, I employ Dr.
22 Neels's FHP measures and the larger of his two samples to minimize
23 methodological differences with Dr. Neels's reported models.

IV.B.2. Contrary to Dr. Neels's Claims, His Models Could Have Been Estimated with Allied Labor Workhours

Dr. Neels is incorrect in claiming that he lacked data suitable to estimate his model for allied labor operations. UPS-T-1 at 49. The data sets originally provided in USPS-LR-L-56 included workhours from the National Workhour Reporting System (NWRS) for LDC 17, the Labor Distribution Code to which the allied labor cost pools belong. USPS-LR-L-56 also provided NWRS workhours for LDC 13, which in addition to SPBS and LIPS operations includes APPS, mechanized sack sorting, mechanized tray sorting, and robotics operations. Using these data would have permitted Dr. Neels to extend his analysis to cover an additional \$3.52 billion in BY 2005 mail processing cost.

Using the NWRS data from USPS-LR-L-56, I estimated Dr. Neels's models for LDC 17 allied labor as well as for the "plant-level" hours including the LDC 13 and 17 workhours not incorporated in Dr. Neels's testimony. The results are provided in Table 7, below. Neither version of Dr. Neels's model shows a significant difference in the total elasticity from the sorting operation composite employed in the Postal Service CRA.

Table 7. Results of Neels Mail Processing Model Applied to LDC 17 (Allied Labor) Workhours

Output	LDC 17	LDCs 11-14; 17	USPS BY 2005 Sorting Operation Average
Letter FHP	0.76 (0.08)	0.74 (0.07)	
Flat FHP	0.07 (0.01)	0.03 (0.01)	
Parcel FHP	0.01 (0.01)	0.05 (0.01)	
Total	0.84 (0.07)	0.82 (0.06)	0.85

1 **IV.B.3. Dr. Neels's Model Also Shows Variabilities Comparable to the Postal**
2 **Service CRA When Applied to Total "Function 1" Workhours**

3 Dr. Neels states that his intent was to apply his model to total plant
4 workhours, and his use of the aggregate of the sorting and cancellation
5 operations' workhours was a compromise driven by data availability. UPS-T-1 at
6 49. As I noted in the previous section, Dr. Neels actually had failed to use data
7 of significantly broader scope that had been available in the Postal Service's
8 datasets all along, and analyzing those data with Dr. Neels's model supports the
9 Postal Service's overall variabilities for plants.

10 UPS requested MODS and NWRS data at still-higher levels of
11 aggregation, including the "Function 1" aggregate. Total "Function 1" workhours
12 encompass, in addition to the hours analyzed in the previous section, supervisory
13 workhours from LDC 10 and workhours in LDC 18 "miscellaneous" operations
14 (e.g., Express Mail, Registry and Mail Processing Support). I estimated a
15 "Function 1" model, using Dr. Neels's specification, with the "Function 1" MODS
16 workhours provided in USPS-LR-L-190.¹³ The costs associated with the
17 supervisory workhours are included in Cost Segment 2, and have been a
18 "piggybacked" cost component assumed to be volume-variable to the same
19 extent as the associated mail processing labor costs in Cost Segment 3.1 (See
20 USPS-LR-L-1).

¹³ I used MODS rather than NWRS data for this analysis because the NWRS data frequency changed in FY 2004, when the Postal Service adopted the U.S. Government fiscal calendar. Prior to FY 2004, the MODS and NWRS data are very highly correlated (correlation coefficient = 0.99). Conceivably, a future analysis of these data could recast the data to a common frequency, similar to the methods used with the MODS data from USPS-LR-L-56.

1 Results from the model with total "Function 1" hours are presented in
2 Table 8, below. While the total elasticity is slightly higher than that from the
3 NWRS-based model reported in Table 7, above, the result nevertheless does not
4 differ significantly from the sorting operation composite used in the Postal
5 Service CRA, and the variability is significantly less than 100 percent.

6 **Table 8. . Results of Neels Mail Processing Model Applied to Total**
7 **Function 1 (MODS Plant) Workhours**

Output	Neels Model, Function 1 Hours	USPS Sorting Operation Average
Letter FHP	0.82 (0.03)	
Flat FHP	0.03 (0.01)	
Parcel FHP	0.05 (0.01)	
Total	0.90 (0.03)	0.85

8
9

1 **V. Prof. Roberts's Models are Potentially Workable, but Would Benefit from**
2 **Significant Improvements**

3 **V.A. Prof. Roberts's Theoretical Framework Is Conceptually Valid, but**
4 **Cannot Fully Specify the Empirical Models.**

5 **V.A.1. Prof. Roberts Fails to Articulate the Relationship Between His**
6 **"Outputs" and the Costs He Purports to Explain.**

7 While Dr. Neels's proffered operational explanations of various component
8 activities of sorting operations do not provide much if any support for his theories
9 of cross-operation and cross-shape cost effect, as discussed above, Prof.
10 Roberts provides no explanation at all of the operational substance behind his
11 characterization of sorting operations' outputs. (Response to USPS/OCA-T1-3d,
12 Tr. 23/8291.)

13 Prof. Roberts's dismissal of the constituent activities as "narrow" is
14 malapropos considering that runtime, the largest of the "narrow" activities,
15 comprises more than three-fifths of the total letter and flat sorting labor Prof.
16 Roberts studies, and more than three-quarters of the "direct labor" (i.e., costs
17 excluding "overheads"). The other activities, while much smaller, nevertheless
18 constitute large amounts of the labor usage Prof. Roberts is studying. As I
19 explained in my direct testimony (USPS-T-12 at 27-29), and Prof. Roberts does
20 not counter, there is a clear engineering relationship between labor usage for
21 sorting operation activities and the total number of sorts, i.e., TPF. At some
22 point, there must be tangible resource usage effects not captured by TPF. As

1 discussed above with respect to Dr. Neels's account of the activities, effects
2 outside of own-operation TPF are small.

3 **V.A.2. A Correct Understanding of the Relationship Between TPF and FHP**
4 **Indicates a Closer Relationship Between the OCA and Postal Service**
5 **Models than Prof. Roberts Admits.**

6 The relationship between sorting workhours and TPF does not suggest
7 that the characterization of output in Prof. Roberts's theoretical framework is
8 wrong. In fact, the Postal Service method likewise conceptually starts with an
9 array of mail products differentiated by subclasses, presort level, required sort
10 depth, and other cost-causing characteristics. (USPS-T-12 at 48, lines 14-21.)
11 For reasons I have discussed at length, it is not practical to base an applied
12 analysis on direct measurement of costs for the full array of products; Prof.
13 Roberts seems to have discovered this in pursuit of his models with "additional
14 outputs." The central empirical question is how to use the Postal Service's
15 "operating plan" to usefully characterize sorting operations' outputs. Response to
16 USPS/OCA-T1-40, Tr. 23/8374. This is where Prof. Roberts's models fall short.

17 Prof. Roberts's 2002 and March 2006 papers have not evinced a solid
18 understanding of the distinctions between the MODS TPF (or TPH) and FHP
19 workload measures. Prof. Roberts's tendency has been to conflate FHP with
20 "plant volume" (not recognizing that a significant portion of "plant volume"
21 bypasses outgoing and/or incoming sorting operations) while considering TPF
22 and TPH to be measures of "capital input" (Roberts 2006 at 36).

1 In fact, TPF and FHP measure different aspects of sorting workload. FHP
2 measures the number of pieces sorted, but not the amount of sorting work
3 performed; TPF measures the number of sorts but not the unique pieces worked.
4 The practical question is which of these measures better reflects the causes of
5 labor usage in sorting operations—is it the number of sorts or the number of
6 pieces that is more relevant? The engineering relationships point to the number
7 of sorts. So, as witness Oronzio notes, automated TPF has been preferred by
8 Postal Service operations precisely because it has a closer and more stable
9 relationship with workhours than FHP, and is measured more accurately besides
10 (USPS-RT-15). It is not theoretically impossible to measure sorts with FHP, but it
11 makes little sense to do so when direct measures exist.

12 Some of the properties that make FHP a less desirable analytical tool from
13 a management perspective, such as its inability to show the subsequent
14 processing paths of pieces, also make it difficult to practically distinguish whether
15 the OCA model really is capturing effects outside of the TPF-based Postal
16 Service models. For example, Prof. Roberts's "additional outputs" models define
17 BCS and OCR/ISS FHP as separate "outputs" for letter-sorting operations.
18 Response to USPS/OCA-T1-45(e)-(f), Tr. 23/8381-8383. The flow of
19 successfully OCR'ed pieces to BCS operations would lead one to expect that
20 both "outputs" would have significant effects on BCS resource usage, which Prof.
21 Roberts's models generally show. OCA-T-1 at 42.

22 However, it cannot be concluded that a BCS model using BCS TPF is
23 therefore misspecified. The actual mechanism whereby the OCR FHP affect

1 BCS labor usage matters. If the BCS labor usage due to OCR FHP stems from
2 the subsequent BCS sorts, then there is no problem with the TPF-based model,
3 since the downflow from the OCR FHP is captured in BCS TPF. This is a key
4 respect in which the Postal Service and OCA models are more closely related
5 than Prof. Roberts is willing to admit.

6 Prof. Roberts also agrees that certain "outputs" may totally bypass
7 particular operations – an important case is pieces inducted into manual
8 operations bypassing the automated mailstream – in which case those outputs
9 may not appear in the *bypassed operations' labor demand functions*. Tr.
10 23/8406-8407. Indeed, as will be shown below, Prof. Roberts's models show (if
11 not very efficiently) no effect of manual FHP on automated operations' labor
12 usage. Depending on the details of the specification, including manual FHP as
13 "outputs" may lead to a loss of efficiency, or it may lead to more serious errors if
14 "outputs" with different marginal labor costs are forced to have a common effect
15 on workhours.

16 **V.B. Prof. Roberts's Updates to the Two-Output Models are Unjustified and**
17 **Inconsistent With His Previous Methods.**

18 The models Prof. Roberts presents in OCA-T-1 incorporate several
19 significant changes in econometric methodology, mainly involving sample and
20 instrumental variable selection. OCA-T-1 at 17-18, 27-31. Compared with the
21 methods Prof. Roberts articulated in his 2002 and March 2006 papers, which he
22 cites as background to his model-building exercise (OCA-T-1 at 3-5; response to
23 USPS/OCA-T1-35, Tr. 23/8364), the current changes appear arbitrary and bear

1 justifications that are in conflict (if not flatly contradictory to) the previous work.
2 Prof. Roberts also commits serious econometric errors in his treatment of
3 seasonal variation for his analyses of workhours and piece handlings—errors
4 which would have been completely avoidable had Prof. Roberts simply continued
5 with the correct treatment from his earlier research.

6 **V.B.1. Prof. Roberts's Sample Period is Unnecessarily Short, Particularly in**
7 **Light of His Previous Justification of Much Longer Sample Periods**
8 **Covering Equally Significant Operational Changes.**

9 The major sample change in Prof. Roberts's OCA-T-1 models is to
10 shorten the sample period to FY2002-FY2005, allowing up to 16 quarterly
11 observations per site, versus the FY1999-FY2004 period from the March 2006
12 paper (50 percent longer) and the FY1994-FY 2000 period (75 percent longer)
13 from the 2002 paper. Tr. 23/8419. Prof. Roberts's main explanation for the
14 change is intended to deal with changes to flats processing due to AFSM
15 deployment, though he also extends the treatment to letter operations that are
16 not affected by flats processing changes. This treatment is questionable for flats,
17 barely justified for letters, and inconsistent with Prof. Roberts's previous work.

18 There is no doubt that the AFSM 100 has represented a major
19 advancement for automated flats processing, both by expanding automation
20 capacity and increasing automation productivity. However, Prof. Roberts's claim
21 that it represents a change such that pre-AFSM data from *non-AFSM* Mats
22 operations cannot be used—in contrast to his March 2006 work—is not well
23 justified. The transition from the FSM 881 to the AFSM 100 should have been

1 well-known to Prof. Roberts as of his March 2006 paper. The AFSM 100 has, of
2 course, greatly increased the capacity and productivity of automated flat sorting
3 equipment, and so has permitted automated processing of significant quantities
4 of flat-shape mail that formerly had been processed manually. Of course,
5 relieving automation capacity constraints with much more productive equipment
6 should result in a reduction in measured marginal flat sorting costs.

7 The main issue, though, is that Prof. Roberts's results do not show the
8 effect he claims as motivation. The reduction in sample size causes the standard
9 errors of the estimates to rise, especially for the FSM 1000 elasticities, such that
10 even the large change in the FSM 1000 point estimate is not statistically
11 significant. As a matter of statistical logic, it is inappropriate to introduce a
12 higher-variance estimation procedure, then to argue that there has been a
13 structural change from statistically insignificant differences involving the less-
14 precise estimates.

15 Moreover, while the changes to operations are substantial, they are not
16 obviously more significant than the changes to letter-shape operations over the
17 time period of Prof. Roberts's 2002 analysis. Prof. Roberts extensively
18 discussed significant changes to letter operations over his sample period—which
19 included DBCS deployment, LSM retirement, remote barcoding, and significant
20 expansion of delivery point sequencing—and concluded, for the most part
21 reasonably, that including control variables for technology mix in his models was
22 a sufficient solution. Roberts 2002 at 19-21; see also Tr. 23/8423-8424. In
23 contrast, the relatively minor changes to letter-shape sorting operations that Prof.

1 Roberts cites in justification of the shorter sample period for letter sorting
2 operations do not warrant the change in methodology.

3 **V.B.2. Prof. Roberts's Approach to Seasonal Dummy Variables Is Neither**
4 **Operationally nor Econometrically Justified, and is Contrary to His Correct**
5 **Earlier Treatment**

6 Prof. Roberts introduces a new treatment of quarterly dummy variables in
7 OCA-T-1—excluding them as explanatory variables from the labor demand
8 equations and instead using them as instrumental variables (OCA-T-1 at 28-
9 31)—that is inappropriate both operationally and statistically, and also represents
10 an unwarranted about-face from his previous methods. The change is
11 particularly pronounced from his 2002 paper, in which Prof. Roberts correctly
12 included quarterly dummy variables on similar grounds to those advanced by the
13 Postal Service. Roberts 2002 at 23-24.

14 **V.B.2.a. Contrary to Prof. Roberts's Claims, the Postal Service Operational**
15 **Testimony Did Identify Seasonal Factors Affecting Workhours.**

16 Prof. Roberts claims not to have included seasonal dummy variables in his
17 current models because he could not locate a discussion that would justify their
18 inclusion in the Postal Service's operations testimony. Roberts 2006 at 59. In
19 fact, accompanying the Postal Service's introduction of MODS-based costing
20 methods in Docket No. R97-1, witness Moden described seasonal factors
21 affecting Postal Service operations:

22 ...[T]he volume and characteristics of the mail vary significantly with
23 the mailing seasons. The largest seasonal effect is certainly the

1 holiday mail each November and December. The beneficial effect
2 on productivity of a greater mail volume is overwhelmed by
3 detrimental changes in mail characteristics and the temporary
4 surge in staffing requirements. There is a large increase in letters
5 and packages with illegible handwriting and incomplete addresses.
6 Many of the letters use colored envelopes which are difficult for the
7 OCRs and many of the packages are poorly wrapped. To process
8 the workload in manual operations, temporary clerks are needed
9 who are significantly less productive than the regular staff. Docket
10 No. R97-1, USPS-T-4 at 20.

11 In short, witness Moden described seasonal variations both in staffing patterns
12 and in mail characteristics. So Prof. Roberts is not justified by the absence of
13 operational discussion. Indeed, Prof. Roberts had argued similarly in favor of
14 including quarterly dummy variables in his 2002 paper:

15 The cyclical fluctuations in hours can, however, reflect more than variation
16 in output. Differences in work effort or changes in the mix of more- and
17 less-skilled workers may also occur from quarter-to-quarter. In order to
18 control for these other potential sources of variation in hours we will
19 include a set of three quarterly dummy variables (DQ2, DQ3, and DQ4) to
20 identify observations in the second, third, and fourth postal quarters,
21 respectively. Roberts 2002 at 24.

1 In Prof. Roberts's March 2006 paper, his main results did not incorporate
2 quarterly dummy variables to control for seasonal factors, but he indicated that
3 he had estimated models including such seasonal controls. Roberts 2006 at 59.

4 In his present testimony, in contrast, Prof. Roberts claims never to have
5 incorporated such factors in his models. Tr. 23/8412. Prof. Roberts seems to
6 have discovered the Postal Service's operational explanation for seasonal
7 controls and subsequently forgotten it.

8 **V.B.2.b. Prof. Roberts's Conclusion that Failure of the Quarterly Dummy**
9 **Variables as Instruments is a "Spurious" Result is Unwarranted.**

10 In response to USPS/OCA-T1-12 (Tr. 23/8309), Prof. Roberts showed that
11 his models largely fail "overidentifying restrictions" tests when the quarterly
12 dummies are used as instruments, and largely pass when the quarterly dummies
13 are not so used. While he reaches the (correct) conclusion that the quarterly
14 dummies are inappropriate, he nevertheless judges the result to be "spurious."
15 Given the prior reasons, including those previously expressed by Prof. Roberts
16 himself, Prof. Roberts's assessment is not well-founded. He had ample reason
17 to believe that the correlations among the variables were not coincidental.

18 Prof. Roberts's conclusion is not justified by past evidence that the
19 quarterly dummy variables were irrelevant in the labor demand models. Instead,
20 Prof. Roberts admits that certain of the coefficients on the quarterly dummy
21 variables were statistically significant in his 2002 analysis, but denies that the
22 statistical significance of the effects justifies his former inclusion of those
23 variables. Tr. 23/8414-8415. Prof. Roberts's argument might be admissible if he

1 lacked a prior reason for the variables' inclusion, but that is not the case here.
2 Excluding variables that are both significant and which are expected theoretically
3 to play a role is highly unusual.

4 Moreover, regression theory indicates that Prof. Roberts's observation that
5 the quarterly dummies are highly correlated with volumes makes it less
6 appropriate to exclude them from the models, not more. A basic result for
7 multivariate regression models is that given the model:

8
$$y = b_1 X_1 + b_2 X_2 + \varepsilon,$$

9 an estimate of b_1 from a regression excluding X_2 will be biased and inconsistent
10 unless X_1 and X_2 are orthogonal (i.e., "uncorrelated").¹⁴ In this case, with the
11 quarterly dummies playing the role of X_2 , Prof. Roberts admits that the conditions
12 for excluding them from the model – the absence of correlation with X_1
13 (specifically, the included MODS workloads) – do not hold. OCA-T-1 at 28.

14 Prof. Roberts's explanation that he wishes to make use of (more)
15 seasonal variation in the FHP variables to measure the labor demand elasticities
16 does not remedy the situation, but rather suggests what is likely to be a biased
17 estimation method. In light of the *a priori* operational reason for accounting for
18 seasonal variation in workhours, and the statistical evidence that such effects
19 actually exist, Prof. Roberts's claim that the rejection of the quarterly dummy
20 variables as excluded instruments is "spurious," (response to USPS/OCA-T1-12,
21 Tr. 23/8309) is without merit.

¹⁴ See, e.g., Peter Schmidt, *Econometrics*, New York: Marcel Dekker, 1976, pages 39-40.

1 **V.C. The Postal Service's Updates of Prof. Roberts's March 2006 Models is**
2 **Superior to the Prof. Roberts's Versions in OCA-T-1.**

3 Prof. Roberts's March 2006 paper presented results for a new two-output
4 model (with incoming and outgoing FHP by shape as the outputs) which Prof.
5 Roberts estimated with Docket No. R2005-1 data, which extended through FY
6 2004. Given the likelihood of interest in an update from the Commission, the
7 OCA, and other interested parties, as well as the Postal Service's own interest in
8 understanding Prof. Roberts's models, I updated Prof. Roberts's work with
9 relatively minor changes to accommodate more recent data, BY 2005 cost pool
10 changes, and a partial response to capital measurement issues Prof. Roberts
11 raised. USPS-T-12 at 101-104. For reasons discussed below, should the
12 Commission adopt a version of Prof. Roberts's two-output model, it should
13 employ the updated version of Prof. Roberts's model presented in USPS-T-12.

14 **V.C.1. Prof. Roberts's Explanations for Rejecting the Postal Service Update**
15 **are Incoherent.**

16 While OCA-T-1 did not mention the USPS-T-12 update of Prof. Roberts's
17 March 2006 models, Prof. Roberts was asked in USPS/OCA-T1-12(a) whether
18 he had considered the model and, if so, the basis for rejection. Tr. 23/8306-
19 8308. Prof. Roberts stated that he had, in fact, considered the model, and
20 discussed four substantive points that apparently were the basis of his rejection.
21 However, Prof. Roberts's explanation does not support rejection of the Postal
22 Service updates, as the factors Prof. Roberts raises are not actually defects of
23 the USPS-T-12 update. These were:

- 1 • *Addition of FY 2005 data to the March 2006 sample.* Prof. Roberts
2 observes that this was a “fairly small change” yielding results “very similar”
3 to those in his paper. As I discuss above, the FY 1999-FY 2005 sample
4 period is appropriate. It would be extremely unusual to consider the
5 failure of a new econometric model to “break” from the addition of more
6 data to be a defect.
- 7 • *Implementation of updated capital data to mitigate capital timing issues*
8 *raised in the March 2006 paper.* Again, partly mitigating the problem
9 identified by Prof. Roberts is not a defect. Prof. Roberts seems to have
10 amplified the importance of the anomaly, which appears to be a fairly
11 straightforward result of reporting lags in the PEAS system. I have been
12 investigating solutions to the problem that involve collecting equipment
13 deployment schedules to identify the proper timing, and expect the
14 problem should be amenable to a full solution. In any event, the
15 limitations of the existing data did not prevent Prof. Roberts from
16 recommending models that use it.
- 17 • *Use of FY 2005 weights to combine elasticities.* Once again, this is not a
18 defect, and Prof. Roberts adopted this method in his recommended
19 models.
- 20 • *Implementation of incoming and outgoing D/BCS cost pools.* Prof.
21 Roberts suggests that the change is not “well justified” but stops short of

1 claiming the approach to be incorrect.¹⁵ Prof. Roberts suggests that the
2 "theoretical model" would suggest splitting all operations, which is not
3 unreasonable in principle. Prof. Roberts's argument has a 'make the
4 perfect the enemy of the good' flavor in suggesting that it would be
5 inappropriate to disaggregate two large cost pools with significant costs on
6 both the incoming and outgoing sides if all cost pools are not treated the
7 same. Regardless of the merits of the change, updated results using the
8 BY 2004 cost pool structure incorporated in Prof. Roberts's March 2006
9 paper were also provided (USPS-T-12 at 127), so Prof. Roberts faced no
10 obstacle to rejecting the change if he so desired. Reverting to the earlier
11 cost pool structure would not have substantially altered the results.

12 Thus, Prof. Roberts's reasons were primarily reasons to accept, not to
13 reject, the USPS-T-12 study; given the possibility of controversy over the BCS
14 cost pool issue, I provided results without the change as well. As I discuss in the
15 following sections, Prof. Roberts's updates do not constitute an improvement.

16 **V.C.2. The Postal Service Update of Prof. Roberts's March 2006 Model**
17 **Yields More Robust and Plausible Results, Including by Prof. Roberts's**
18 **Own Explanations.**

19 Prof. Roberts notes that the results from the USPS-T-12 update are
20 similar to those in his March 2006 paper. Response to USPS/OCA-T1-12, op.
21 cit. Indeed, I demonstrated the results from the sample update on a constant-

¹⁵ Prof. Roberts also cites the related change to the AFSM 100 cost pool in the Postal Service models; that had not been implemented in the update of his flat-shape models.

1 methodology basis and the results are very stable from that perspective as well.
2 USPS-T-12 at 104.

3 The same cannot be said for Prof. Roberts's updates. The changes in
4 elasticities from the March 2006 paper are driven by very high measured
5 elasticities for the manual letters and FSM 1000 cost pools. In manual letters,
6 previous versions of Prof. Roberts's models had not unreasonably provided
7 elasticity estimates statistically close to unity. Roberts 2002 at 102; USPS-T-12
8 at 127. Prof. Roberts suggests that diversions of volumes to manual operations
9 may account for the present 152 percent variability (Response to USPS/OCA-T1-
10 8(b), Tr. 23/8300; Tr. 23/8445-8447), but witness Oronzio's testimony shows that
11 Prof. Roberts's explanation is not consistent with Postal Service operating
12 practices. USPS-RT-15 at 10-12.

13 In the case of the FSM 1000, the standard error of the estimated FSM
14 1000 elasticity also increased markedly, and the change derives specifically from
15 the outgoing FHP elasticity. Response to USPS/OCA-T1-16, Tr. 23/8321-8322.
16 In this case, the change is actually inconsistent with Prof. Roberts's own
17 explanation for elasticities that derived mostly from incoming flats FHP from the
18 March 2006 paper, in which he noted that the "volume of outgoing flats is small
19 relative to the volume of incoming flats and... it is basically hard to detect any
20 systematic relationship between this category of FHP and manhours [sic]."
21 Roberts 2006 at 49. The results of the USPS-T-12 update are consistent with
22 Prof. Roberts's correct explanation for the pattern of his previous results.

1 Both results appear to be outliers of sorts, and their lack of operational
2 basis suggests strongly that the changes that led to them, particularly the much
3 shorter sample period, have not actually improved Prof. Roberts's results. In
4 contrast, there are no such anomalies in either Prof. Roberts's March 2006
5 results or the Postal Service update. Accordingly, the latter should be preferred.

6 **V.D. Prof. Roberts's "Additional Outputs" Models Point the Way To**
7 **Improvements, But Prof. Roberts's Implementation is Faulty.**

8 As a characterization of sorting operations, Dr. Neels's alternative model
9 is badly flawed by incorporating cross-shape relationships for which there is no
10 evidence, while failing to allow for features such as cost differences between the
11 automation and manual mailstreams that even Dr. Neels agrees exist. Response
12 to USPS/UPS-T1-16-19, Tr. 23/8494-8497. Prof. Roberts, in contrast, correctly
13 views it as potentially important to represent systematic cost differences between
14 various mailstreams in the labor demand models (see, e.g., OCA-T-1 at 20;
15 Response to USPS/OCA-T1-1, Tr. 23/8287). Indeed, many of the changes Prof.
16 Roberts has pursued from his original 2002 model have been to that effect,
17 including the models with "additional outputs" he examined for OCA-T-1. (OCA-
18 T-1 at 20-24.) While a step in the right direction conceptually, Prof. Roberts's
19 implementation is lacking. In particular, while Prof. Roberts cites to the
20 "additional outputs" models in the course of agreeing that manual and automated
21 mailstreams have significantly different costs (response to USPS/OCA-T1-1-2,
22 op. cit.), his models do not actually distinguish the manual and automated
23 mailstreams.

1 **V.D.1. Prof. Roberts Inappropriately Includes Automation Volumes with**
2 **"Nonautomation" Letters.**

3 The signal failing of Prof. Roberts's efforts to disaggregate FHP by other
4 output characteristics is that his "nonautomation" output actually combines
5 significant amounts of automation-compatible FHP for non-prebarcoded pieces
6 with manual FHP. Response to OCA/USPS-T1-45, Tr. 23/8381-8383. Indeed,
7 as shown in my response to TW/USPS-T11-1(b)-(c) (Tr. 10/2568; 2573), manual
8 FHP are a minority of Prof. Roberts's "nonautomation" category. This would
9 make distinguishing the costs for "true" nonautomation mail from automation mail
10 difficult.

11 A correct approach would have been to have separated the manual FHP
12 into a separate category. The prebarcoded and other automation mail would
13 generally have more similar cost characteristics than the non-automation
14 compatible mail, as Prof. Roberts agrees. Tr. 23/8404. In the meanwhile, Prof.
15 Roberts's additional outputs results are rendered useless by his output
16 characterizations.

17 **V.D.2. Correctly Incorporating the Manual Mailstream in the Roberts Models**
18 **Shows Expected Behavior of Workhours, though the Models are Inefficient.**

19 As an indication of the effects of correctly distinguishing manual from
20 automation FHP in the letter-shape models, I estimated two-output models using,
21 instead of incoming versus outgoing FHP, manual versus automation FHP. The
22 principal results are shown in Table 9, below. An interesting feature is the large
23 and negative but statistically insignificant elasticities of automated letter

1 operations' workhours with respect to the manual FHP. Compared to the Postal
 2 Service models (USPS-T-12 at 95), Prof. Roberts's FHP-based models are very
 3 inefficient at showing that there is statistically zero elasticity of automation hours
 4 with respect to manual output. When the manual FHP are eliminated from the
 5 specification, the automation FHP elasticities are considerably better-behaved,
 6 suggesting that there is a significant efficiency cost to estimating the superfluous
 7 manual output effect in automated operations.

8

9 **Table 9. Principal Results for Roberts Letter Models with Manual and**
 10 **Automated FHP "Outputs"**

Cost Pool	Manual Variability	Automation Variability	Total Variability	Variability-Just Automation
Manual	0.32 (0.29)	0.30 (0.20)	0.61 (0.17)	n/a
Agg BCS	-0.57 (0.44)	1.51 (0.30)	0.94 (0.25)	1.18 (0.11)
OCR	-0.58 (0.68)	0.84 (0.50)	0.26 (0.40)	0.49 (0.27)

11

12

1 **VI. Prof. Roberts's "Proportionality Assumption" Analysis Repeats Many of**
2 **Dr. Neels's Errors from Docket No. R2000-1 and Fails to Demonstrate True**
3 **Violations of "Proportionality" Between Piece Handlings and Delivered**
4 **Volumes.**

5

6 **VI.A. The "Distribution Key" Method is Necessary, Appropriate, and Used**
7 **by Prof. Roberts.**

8 Prof. Roberts joins Dr. Neels in broad criticism of the "proportionality
9 assumption" underlying the "volume-variability/distribution key" method for
10 computing volume-variable costs by subclass. OCA-T-1 at 9-10. Like Dr. Neels
11 in Docket No. R2000-1, Prof. Roberts advances an analysis of the relationship
12 between MODS FHP and TPF as purportedly showing violation of the
13 "proportionality assumption." I discussed this extensively in Docket No. R2000-1
14 (Docket No. R2000-1, USPS-RT-6 at 10-22, 26-28), and from a theoretical
15 standpoint, that discussion also applies to Prof. Roberts's critique.

16 Ironically, Prof. Roberts in this proceeding and Dr. Neels in Docket No.
17 R2000-1 are united in criticizing the distribution key method while proposing
18 distribution key methods of their own. In Prof. Robert's case, his distribution key
19 method is outlined in the response to USPS/OCA-T1-24 (Tr. 23/8335-8340) and
20 the mathematical details of the method were confirmed on oral cross-
21 examination (Tr. 23/8342). While Prof. Roberts considered the mathematical
22 explication of his method a theoretical document and insists on calling FHP "plant
23 volume," his testimony speaks for itself in terms of the output variables he used

1 and the resulting costs requiring distribution to subclass. Obviously, Prof.
2 Roberts's self-deconstructing critique would only be made worse by adding
3 further assumptions regarding how FHP relate to his unobserved idealized
4 outputs.

5 As I argued in Docket No. R2000-1, the Commission should accept that
6 the mathematics of the distribution key method constitute a legitimate and
7 necessary approximation to the "true" or "constructed" volume-variable costs,
8 and do not bias the volume-variable cost calculations. The Data Quality Study
9 agreed that the general methods for computing volume-variable cost in the Cost
10 and Revenue Analysis are sound:

11 The Postal Service uses an economically sound approach grounded in
12 activity based concepts to determine its sub-class unit volume variable
13 costs (UVVCs) on which Postal Rates are based. The categories of data
14 collected and analyzed are sufficiently detailed and appropriate to arrive at
15 the sub-class UVVCs.

16 Data Quality Study, *Technical Report #1: Economic Analysis of Data Quality*
17 *Issues* at 32.

18 **VI.B. Prof. Roberts's Models Purporting to Show Violations of**
19 **Proportionality Do No Such Thing When Fundamental Errors Are**
20 **Corrected.**

21 **VI.B.1. As With the Labor Demand Models, Prof. Roberts's Choice of**
22 **Instrumental Variables is Inappropriate.**

23 Problems with the use of quarterly dummy variables as instruments
24 extend to Prof. Roberts's analysis of the relationship between TPF (or TPH) and
25 FHP. Prof. Roberts's TPF model specifications mirror his labor demand models

1 in failing to include quarterly effects as explanatory variables, and including
2 quarterly dummies as excluded instrumental variables. Response to
3 USPS/OCA-T1-9, Tr. 23/8303. Prof. Roberts had not explored alternative
4 specifications (response to USPS/OCA-T1-19(d), Tr. 23/8327), and he did not
5 conduct overidentifying restrictions tests to show that his treatment of the
6 quarterly dummies as excluded instruments was appropriate.

7 As I noted above in section V.B.3, seasonal effects in MODS data
8 identified by witness Moden include effects on both the composition and
9 characteristics of mail volumes. These can affect both handling patterns by
10 operation as well as the required number of sorts per piece, and so there would
11 be no prior reason to exclude seasonal variables from piece handling models.

12 Consistent with the operational expectation that seasonal effects would be
13 present in the data, the outcomes of the overidentifying restrictions tests on Prof.
14 Roberts's piece handling models show Prof. Roberts's treatment to be
15 inappropriate. With the quarterly dummies dropped from the list of excluded
16 instruments, the overidentifying restrictions are not rejected. Including the
17 quarterly dummies shows them to be jointly significant. Please see USPS-LR-L-
18 192 for the results.

19 The logical conclusion is that Prof. Roberts should have treated the
20 quarterly dummies as included explanatory variables, and not as excluded
21 instruments.

22

1 **VI.B.2. Prof. Roberts Misspecifies the Relationship Between TPF and FHP**

2 Like Dr. Neels before him (Docket No. R2000-1,USPS-RT-6 at 18-19),
3 Prof. Roberts's analysis is based on misspecified models of the TPF-FHP
4 relationship. Prof. Roberts's models attempt to explain operation-level TPF using
5 a single, shape-level FHP variable. OCA-T-1 at 12. Prof. Roberts's model is
6 neither operationally nor econometrically appropriate.

7 From an operational standpoint, Prof. Roberts's models fail to reflect basic
8 facts of mailflows and the connections between mailflows and piece handling
9 measures. Because, in general, various components of FHP would be expected
10 to make different contributions to particular operations' TPF, employing only
11 shape-level aggregates of FHP is conceptually inadequate for describe
12 operation-level TPF.

13 Some components of FHP will, in fact, have little or no effect on certain
14 operations' TPF simply because the pieces do not flow to certain operations.
15 The canonical example, which Prof. Roberts acknowledges, is that pieces
16 recorded as manual FHP will not flow to automated operations. Response to
17 USPS/OCA-T1-7, Tr. 23/8299. Nevertheless, Prof. Roberts's models incorrectly
18 force manual and automated FHP to have the same effects on automated piece
19 handlings, even though the true effect of the manual FHP is zero.

20 The misspecifications arise as Prof. Roberts's piece handling models are:

21 (1) $\ln \text{TPF}_{ij} = a_i + b \ln \text{FHP}_{\text{shape},i} + g \cdot X_i + e$

22

1 when the true relationships are given by:

$$2 \quad (2) \text{ TPF}_{ij} = b_{1i} \text{ FHP}^*_{ij} + b_{2i} \text{ FHP}^*_{i,j}$$

3 where FHP^*_{ij} is true FHP in operation j , and $\text{FHP}^*_{i,j}$ represents a vector of true
4 FHP in operations from which subsequent handlings may flow to operation j . In
5 the case of automated operations, it is possible to write:

$$6 \quad (2a) \text{ TPF}_{ij} = b_{1i} \text{ FHP}^*_{ij} + b_{2i} \text{ FHP}^*_{i,j} + b_{3i} \text{ FHP}^*_{i,\text{man}},$$

7 where $\text{FHP}^*_{i,\text{man}}$ is (true) manual FHP. Mailflows imply a null hypothesis of $b_{3i}=0$
8 – i.e., since manual FHP do not flow to automated operations, they should not
9 cause TPF in automated operations.

10 In general, equation (1) is inappropriate because equation (2) suggests
11 that same-operation FHP and other-operation FHP may have different effects,
12 and equation (2a) shows that in automated operations the manual FHP would not
13 be expected to affect TPF at all, when contrary to fact Prof. Roberts's models
14 force manual and automated FHP to have the same effect.

15 In defense of his methods, Prof. Roberts suggests that his models reflect
16 the relative contributions of the components of FHP. Response to USPS/OCA-
17 T1-19, Tr 23/8326-8327. Prof. Roberts's claim does not rescue his approach. It
18 is true that if the components of FHP (FHP_j , FHP_{-j} , and/or FHP_{man}) could be
19 expressed as constant proportions of the shape-level aggregates, then equation
20 (1) could, in principle, estimate the joint effect of the FHP variables in equations
21 (2) or (2a). However, Prof. Roberts's own data analysis shows shifts in the
22 composition of FHP, notably away from manual FHP, even over the relatively
23 short time periods under consideration. The only reliable basis for Prof. Roberts

1 to assert that accommodating mailflows in his models is irrelevant would have
2 been to have estimated less-restricted models such as equation (2) and shown
3 that the results were substantially unchanged versus his restricted specification.
4 He did not do so.

5 **VI.B.3. Valid Shape-Level Specifications Show No Significant Violations of**
6 **"Proportionality" Between TPF and FHP.**

7 For shape-level aggregates, it is possible to write a relatively simple
8 equation relating TPF and FHP without the need to account for differential effects
9 on handlings from various portions of the mailstream. Docket No. R2000-1,
10 USPS-RT-6 at 16-17. Using either Prof. Roberts's specification from his
11 threestep.do program in OCA-LR-2 or a specification allowing separate effects
12 on TPF from automated and manual FHP, there is no evidence that the TPF-FHP
13 elasticities are statistically different from unity. See Table 10, below. These
14 results are consistent with similar non-instrumental variables results from Docket
15 No. R2000-1. Docket No. R2000-1, USPS-RT-6 at 22.
16

1 **Table 10. Results for Shape-Level TPF-FHP Models**

Shape	Roberts Model[1]	Reject Over-identifying restrictions ?	USPS	Reject Over-identifying restrictions?
All Letters	1.04 (0.03)	Yes	0.85 (0.13)	Yes**
All Flats	0.79* (0.01)	Yes	1.13 (0.15)	No

2 * Differs from 1.00 at 5% significance level or better

3 ** Rejects at the 5% significance level, but not the 1% level

4 [1] Estimated using procedures from OCA-LR-2, program threestep.do.

5

1 **VII. Appropriate Methods for Applying Roberts-Style Models to Cost**
2 **Segment 3.1 Can and Should Make Use of Existing Data Systems and**
3 **Analyses**

4 **VII.A. The Subclass Volume-Variable Cost Method Described by Prof.**
5 **Roberts Clearly Applies the Distribution Key Method**

6 While Prof. Roberts has been highly (if inappropriately) critical of the
7 "distribution key" method for calculating volume-variable cost by subclass in the
8 Postal Service CRA (OCA-T-1 at 11), when Prof. Roberts articulated a method
9 for implementing his models in the mail processing cost calculations, the method
10 he described was itself an example of the "distribution key" approach. Response
11 to USPS/OCA-T1-24, Tr 23 8337-8340. The elasticities Prof. Roberts estimates
12 in his empirical model do not identify volume-variable costs by subclass, so he
13 posits distribution keys that assign the volume-variable costs associated with his
14 models' FHP outputs to subclasses of mail. Moreover, since plants' sorting
15 volumes are distinct from the "delivered volumes" Prof. Roberts considers to be
16 the final outputs of the Postal Service, Prof. Roberts's method clearly involves a
17 "proportionality assumption" of its own.

18 What has happened is that Prof. Roberts has stumbled upon a major
19 difference between his theoretical framework and his empirical implementation.
20 Prof. Roberts's theoretical framework assumes the ability to measure costs for a
21 large number of distinct mail products (based on mailer preparation level, the
22 depth of sortation in Postal Service operations, subclass of mail, and other
23 relevant cost-causing characteristics), when as a practical matter the data and
24 econometric models Prof. Roberts deploys can only measure costs for a relative

1 handful of the relevant categories. Prof. Roberts finds himself in the very
2 common position of not being able to empirically implement an idealized
3 "constructed marginal cost" model, and needing to rely on the assumptions he
4 has criticized in order to proceed with a feasible approach.

5 Put another way, Prof. Roberts's explication of his model in terms of a
6 single product (Roberts 2006 at 12-26; seminar transcript at 20-22) was not a
7 useful simplification of reality, insofar as the mail processing costing exercise
8 fundamentally involves computing costs for multiple products. Prof. Roberts
9 seems to have misled himself into believing that a "constructed marginal cost"
10 method was feasible when it is not; as the punchline of the old joke about the
11 economist and the can of food on a desert island goes, by assuming away the
12 Postal Service's products, Prof. Roberts assumed his can opener.

13 As was discussed, above, the "distribution key" method is both necessary
14 to implement subclass-level volume-variable costs and conceptually reasonable
15 in that given a suitable choice of the distribution key, it constitutes an
16 approximation to the "true" volume-variable costs. Thus, the practical necessity
17 of employing the distribution key method does not involve any material
18 compromise of costing accuracy.

19 **VII.B. Limitations of Prof. Roberts's "Output" Measures Suggest that IOCS-**
20 **Based Distribution Keys are Appropriate to Represent Cost Differences**
21 **Within Volume Categories**

22 Prof. Roberts's theoretical model assumes the ability to measure costs for
23 a large number of distinct mail products (based on mailer preparation level, the

1 depth of sortation in Postal Service operations, subclass of mail, and other
2 relevant cost-causing characteristics), when as a practical matter the FHP data
3 and econometric models Prof. Roberts deploys can only measure costs for a
4 relative handful of the relevant categories. (See, e.g., OCA-T-1 at 43-44.)
5 Therefore, not all of the relevant differences in resource usage will be reflected in
6 the marginal costs associated with the various FHP measures in Prof. Roberts's
7 empirical models. Using distribution keys of pieces by subclass, which assumes
8 uniform marginal costs within each pool of volume-variable costs, will thus tend
9 to overstate costs for low-cost mail that is either more presorted or processed to
10 less-than-average sort depth, and conversely will underestimate costs for higher-
11 cost mail categories.

12 Should the Commission choose to adopt a variation of Prof. Roberts's
13 empirical models, it should use IOCS-based distribution keys to deal with relative
14 workload differences within the output categories in Prof. Roberts's models. As
15 the Commission observed in Docket No. R97-1, the IOCS-based subclass
16 distribution keys may be regarded as measuring the distribution of pieces
17 processed in the operation weighted by labor usage (PRC Op., Docket No. R97-
18 1, ¶3155). Thus, the IOCS distribution keys would effectively de-average costs
19 within Prof. Roberts's FHP categories and avoid the problem of under-distributing
20 volume-variable cost to mail categories with relatively high resource usage.

1 **VII.C. Using Prof. Roberts's Single Output Model is Conceptually**
2 **Inappropriate and Does Not Solve Distribution Key Issues**

3 Prof. Roberts suggested the possibility of employing his single-output
4 models as a means of circumventing limitations in the available volume data.
5 (Tr. 23/8440.) This approach would enshrine the least appropriate form of Prof.
6 Roberts's models, both from an econometric and operational perspective, as
7 discussed above. Nor are they even Prof. Roberts's recommended models,
8 which for letter-shape operations are two-output models similar to those
9 presented in his March 2006 paper. Response to USPS/OCA-T1-8, Tr. 23/8300.
10 Nor does it actually solve any distribution key data availability problem.
11 Therefore, the Commission should not adopt this approach.

12 Much of the point of Prof. Roberts's March 2006 two-output models was to
13 begin to recognize resource usage (and hence cost) differences between
14 components of shape-level FHP. Roberts 2006 at 4-6. It follows that employing
15 variability models based on *more* aggregated FHP *increases*, not decreases, the
16 need to deaverage the FHP marginal costs.

17 Beyond the need to deaverage the FHP marginal costs implied by Prof.
18 Roberts's models, Prof. Roberts's suggestion that subclass volume measures
19 could be used to distribute costs derived from *more* aggregated FHP-based
20 models is incorrect. This appears to result from Prof. Roberts's mistaken belief
21 that FHP and ODIS-RPW volumes differ primarily in that FHP data do not offer
22 subclass detail. Response to USPS/OCA-T1-4.b, Tr. 8293. In fact, since the
23 ODIS-RPW volumes include pieces that bypass sorting operations, and in some
24 cases even mail processing plants in their entirety, employing such data for

1 sorting operations' distribution keys would inappropriately distribute costs to mail
 2 that bypasses sorting operations. Conceptually, IOCS is a superior source of
 3 distribution key data since it is possible to identify sets of "handling mail" tallies
 4 representing pieces processed in the modeled operations.

5 **VII.D. Using Existing Cost Pools and Distribution Keys with the Roberts** 6 **Model**

7 The cost distribution method described by Prof. Roberts may be applied
 8 with relatively modest changes to present volume-variable cost calculations. In
 9 particular, since Prof. Roberts's labor demand equations correspond to cost
 10 pools, his method permits (and, indeed, requires) the retention of the MODS cost
 11 pools he models. The distribution keys may employ IOCS tallies corresponding
 12 to sets of operations used to aggregate the FHP. For Prof. Roberts's two-output
 13 (incoming and outgoing) model, the subclass volume-variable cost calculation
 14 Prof. Roberts proposes is:

$$15 \quad RVVC_{sj} = C_s \eta_{s,IN} d_{s,IN,j} + C_s \eta_{s,OUT} d_{s,OUT,j}$$

16 Where s indicates the shape of mail, and j indicates subclass; C_s is the cost for
 17 the shape s operations, the terms η are the estimated elasticities and the d 's are
 18 distribution key shares. Since Prof. Roberts calculates his shape-level
 19 elasticities as:

$$20 \quad \eta_{s,IN} = \sum_{i \in s} \phi_i \eta_{i,IN} \text{ and } \eta_{s,OUT} = \sum_{i \in s} \phi_i \eta_{i,OUT},$$

1 where ϕ_i is the cost share for operation (i.e., cost pool) i associated with shape s ,
 2 and the elasticities inside the summation are from Prof. Roberts's cost pool-level
 3 labor demand equations. Note that for cost pool i ,

$$4 \quad C_i = \phi_i C_s.$$

5 Combining results, Prof. Roberts's formula is equivalent to

$$6 \quad RVVC_{sj} = d_{s,IN,j} \sum_{i \in s} C_i \eta_{i,IN} + d_{s,OUT,j} \sum_{i \in s} C_i \eta_{i,OUT}$$

7 That is, the pools of volume-variable costs to be distributed (the summation
 8 terms) are the product of the existing cost pool dollars and the elasticities from
 9 Prof. Roberts's individual equations. The result is then distributed to subclass on
 10 the appropriate distribution keys.

11

1 **VIII. Conclusions**

2 When correctly applied, the analyses presented by Prof. Roberts and Dr.
3 Neels provide no indication that mail processing variabilities materially exceed
4 100 percent at the cost pool level or for larger aggregates of mail processing
5 labor costs. These results are broadly consistent with those presented by the
6 Postal Service for nearly ten years. Accordingly, the Commission should adopt
7 econometric models consistent with these results. While the Postal Service
8 models are most consistent with the structure of operations and the most
9 demonstrably robust of the methods under discussion, I would regard Prof.
10 Roberts's March 2006 models as updated in USPS-T-12 as an acceptable
11 alternative.

12 Outside of sorting operations, variabilities should be determined using the
13 Postal Service method of computing a weighted average of the the sorting
14 operation variabilities, or alternatively using the results from the full-plant version
15 of Dr. Neels's models, as presented in Section IV.B.2, above.

16 Should the Commission not accept an econometric variability model, it
17 should recognize that certain costs, notably for setup and take-down activities in
18 sorting operations, are not volume-variable. The method described in my
19 response to MPA-ANM/USPS-T12-2 (Tr. 10/2527), is appropriate for identifying
20 the costs to be treated as non-volume-variable. As described above, the
21 Commission should decline to assign the non-volume-variable costs to subclass

1 other than via a theoretically correct treatment of inframarginal costs, such as
2 that incorporated in the Postal Service incremental cost model.

3 In the event the Commission adopts no econometric variability model, the
4 Commission should note that all of the alternatives under consideration are
5 applications of the panel data econometric framework, and direct that
6 subsequent analysis employ that approach as the correct econometric
7 methodology, as recommended by Prof. Greene in Docket No. R2000-1 (Docket
8 No. R2000-1, USPS-RT-7 at 5, Tr. 46E/22040).

9 Finally, should the Commission adopt econometric models derived from
10 Prof. Roberts's and/or Dr. Neels's work, it should continue to distribute costs to
11 subclass according to the present IOCS-based methods. This is necessary to
12 ensure that cost differences not captured in the FHP outputs of those models are
13 properly reflected in subclass volume-variable costs.

14

1 MR. HESELTON: Mr. Chairman, I note that
2 Witness Bozzo is also sponsoring a Category II library
3 reference, USPS-LR-L-192, entitled Materials Relating
4 to the Rebuttal Testimony of A. Thomas Bozzo,
5 USPS-RT-5.

6 BY MR. HESELTON:

7 Q I would like to ask Mr. Bozzo if he is
8 familiar with the contents of that library reference?

9 A I am.

10 Q And that library reference today remains as
11 it was originally filed with the corrections?

12 A Yes. I believe there were corrections filed
13 to that as well. With those corrections, I have no
14 additional.

15 Q And if you were to testify orally today,
16 your library reference would be the same?

17 A Yes, it would.

18 MR. HESELTON: Okay. Mr. Chairman, I also
19 ask that the library reference identified as
20 USPS-LR-L-192 be admitted as evidence for the record.

21 CHAIRMAN OMAS: Without objection. So
22 ordered.

23 This brings us to oral cross-examination.
24 There have been three requests for oral cross-
25 examination.

1 Mr. Costich, would you please begin?

2 MR. COSTICH: Thank you, Mr. Chairman.

3 CROSS-EXAMINATION

4 BY MR. COSTICH:

5 Q Good morning, Dr. Bozzo.

6 A Good morning, Mr. Costich.

7 Q Could you look at the bottom of page 51 of
8 your testimony?

9 A I have it.

10 Q Here you are quoting Witness Moden from R97.
11 Is that correct?

12 A That's correct.

13 Q He said that volume and characteristics of
14 mail vary significantly with the mailing season,
15 right?

16 A That's the beginning of the quote, yes.

17 Q There is a surge in volume in December? Is
18 that correct?

19 A He doesn't use the term surge. There is
20 higher volume at the holiday peak.

21 Q Will this be reflected in FHP?

22 A To the extent that the additional volume
23 associated with the seasonal peak requires processing,
24 it will be reflected in TPH, TPF and FHP.

25 Q Does the December increase in volume include

1 increases for both prebarcoded and not barcoded FHP?

2 A I couldn't say offhand.

3 Q On the next page of your testimony at page
4 52 you quote Witness Moden as referring to temporary
5 increases in staffing requirements. Is that right?

6 A That's correct.

7 Q And is it your position that this sort of
8 staffing response to a volume increase is not a form
9 of volume variability?

10 A It may be partly a response to volume, but I
11 think as Mr. Oronzio pointed out earlier today it is
12 also, if not primarily, a response to the
13 characteristics of the volume that is in a sense an
14 attendant of the increase in volume.

15 In particular, I would identify it as a
16 transient seasonal effect which should be treated as
17 such.

18 Q It happens every year, correct?

19 A That's correct.

20 Q And there is a volume increase, correct?

21 A Correct, and I suppose you would have to say
22 for symmetry purposes that there is a volume decrease
23 that follows the increase.

24 Q And is there a response in terms of hours to
25 that?

1 A Well, again mail characteristics in general
2 would change to the mix of mail that was consistent
3 with the mail outside of the holiday season, and
4 temporary holiday staffing would be released.

5 Again, I think that really the net change,
6 if you wanted to look at it one way, is that these two
7 fluctuations should in some respects cancel each other
8 out.

9 If you want to get a response to the volume
10 variability question, which is what happens when you
11 increase mail volume other things held equal and not
12 just, for instance, if you increase mail volumes that
13 occur at the peak of the Christmas rush, then I
14 believe it's appropriate to control for these seasonal
15 variations.

16 Q If the volume of mail in December were the
17 same as the volume in July would there be any reason
18 to us a seasonal dummy?

19 A There could be. Again, the question as Mr.
20 Oronzio described is not so much one of volume as one
21 of mail characteristics, so even if the volume were
22 the same if there were reason to believe the
23 characteristics to be different then it may be
24 appropriate to control for the variation in mail
25 characteristics.

1 Again, the question is whether the change in
2 characteristics is permanent or if it simply reflects
3 a transient seasonal factor. That's what Mr. Moden
4 describes here. It is in fact what Professor Roberts
5 seemed to have taken into account in his 2002 paper as
6 well.

7 Q Does the Postal Service use a different
8 technology to sort mail in December than it does in
9 July?

10 A I think you'd need to specify what you mean
11 by a different technology. If you mean that they --
12 they certainly do not bring in sorting technologies in
13 the sense of new types of equipment that are not in
14 place through the rest of the year.

15 As we heard earlier, the Postal Service even
16 in peak periods tries to process the mail in accord
17 with its normal operational plan to the maximum extent
18 possible if only because that is what minimizes its
19 labor costs.

20 Q Is there a different mix of technologies in
21 December as opposed to July?

22 A There may be some small variations, which I
23 think are captured by -- which may be captured by the
24 work hours.

25 Q Is the volume increase in December an

1 ordinary peaking phenomenon?

2 A I think it's a regular phenomenon of the
3 mail volumes, particularly for letter mail, I think in
4 part because the underlying reasons for the mail
5 differ. I don't believe that the peak of flat mail
6 volumes occur at the same time as letter mail volumes.

7 Q Well, let's restrict ourselves to letter
8 mail volumes for the moment, and I'm not sure I got an
9 answer to my question.

10 Is the increase in letter volume in December
11 an ordinary or a common peaking phenomenon?

12 A If by ordinary and common you mean it
13 generally happens every December, then yes. As I said
14 earlier again, the back side of the peak then follows
15 as January follows December.

16 Q In economics is the standard solution to a
17 peaking problem to use more expensive but more
18 flexible resources?

19 A I don't know what you mean by standard. It
20 certainly depends on the capacity of the firm in
21 question, the cost of bringing additional capacity at
22 various sorts on line.

23 For instance, in electricity generation my
24 understanding is that it's typical to have higher cost
25 generation sources brought on line to deal with peak

1 demand. Of course, peak demand is quite different in
2 the case of electricity demand because, for instance,
3 it's 100 degrees in some part of the country on one
4 afternoon and all of a sudden everybody turns their
5 air conditioning on thus creating enormous demand for
6 electricity.

7 Again, I think the Postal Service differs in
8 a couple of important respects. One is that it's not
9 easy to bring in capacity, so I think that the
10 capacity that's present is sized to accommodate quite
11 a bit of volume peaking.

12 As Mr. Oronzio said, even in the DBCS or
13 even, excuse me, in the delivery point sequencing
14 operations for the DBCS the Postal Service maintains
15 some reserve capacity to deal with unforeseen volume
16 surges, unforeseen failures of equipment and the like,
17 and that represents, if you will, their processing,
18 their automated processing bottleneck.

19 Given that and I think given the other
20 important fact of Postal volumes, which is that while
21 there is peaking during the holiday season for
22 letters, before and after the holiday season for flats
23 as more catalogs are mailed, for instance, it's the
24 case that plants have very substantial volumes sorted
25 in them practically every day.

1 So it's not as if it's common for plants to
2 sort 10,000 pieces and then a million tomorrow or
3 anything of the sort. The volume peaking pattern is
4 much less pronounced than in industries where bringing
5 in high cost technologies for very short periods of
6 time is common.

7 Q I take it you are trying to use seasonal
8 dummies to account for cost causing characteristics
9 other than volume. Is that correct?

10 A That's the basic idea of including the
11 seasonal dummies to the extent that work hours have an
12 autonomous seasonal component.

13 Again, by autonomous I mean not related to
14 the processing volumes, the level of capital input,
15 the number of delivery points or any of the other
16 variables in the model.

17 Q If volume itself is fluctuating seasonally
18 and you use a seasonal variable to control for other
19 factors, aren't you bound to essentially mute the
20 effect of volume on cost?

21 A Well, mute is not a technical term of
22 econometrics. Would what happen is if there is some
23 seasonal component to the volumes, as well as the work
24 hours, then the volume and the work hours or the
25 seasonal factors and the volumes will be collinear to

1 some extent.

2 The effect of that is that there is less
3 independent variation in volume to use in the
4 estimation process. This is to some extent what
5 Professor Roberts was describing in his testimony.
6 The only variation that's taken out of volume,
7 metaphorically speaking, is the common component
8 that's associated specifically with the season and not
9 with any other factor, so as a practical matter that
10 leaves considerable variation in the volumes
11 remaining.

12 When you say mute the effect, as to the
13 technical meaning or possible technical meaning of
14 your term mute the effect, if you're implying that the
15 problem may be that including the quarterly dummies
16 would bias the results that would be totally wrong.

17 The basic result for multivariant regression
18 models is that if you have Variable A and Variable B
19 that belong in the model and you estimate the model
20 with A but not B that your coefficient estimates for
21 the Variable A are going to be biased when you omit
22 them and not the other way around.

23 That is, you can lose efficiency in the
24 estimation by putting in additional variables whether
25 they're relevant or not, but as a general matter you

1 do not normally bias regression estimates by including
2 additional exogenous variables.

3 So in summary, mute is not a very good
4 characterization of what happens. I think that you
5 may tend to get other things held equal, somewhat less
6 precise estimates in the sense that they may have
7 higher sampling variation than they otherwise would
8 have, but the addition of the variables, particularly
9 when there's evidence that they're relevant, not only
10 would not bias the regression.

11 In fact, the correct conclusion to make
12 would be that any regression that omitted them was
13 biased.

14 Q A dummy variable is a little different than
15 volume or hours in the sense that it's all or none,
16 yes?

17 A That's correct. A dummy variable takes on a
18 value of one when a certain criterion is met and zero
19 otherwise.

20 Q And isn't that a rather blunt instrument for
21 attempting to discriminate between a volume increase
22 and a change in the composition of that volume?

23 A Well, I think that if you had good measures
24 of changes in the composition that you would
25 conceivably want to use them as a researcher.

1 As for whether it's a blunt instrument,
2 again it may seem that the method of having one versus
3 zero only allows two situations, but econometrically
4 what happens is that it picks up only those changes
5 that are associated with the criterion that determines
6 whether the value is one or zero.

7 In that respect I would characterize it in
8 fact as something of a fine instrument in the sense
9 that dummy variables are very unlikely to pick up
10 material effects from variables that don't just follow
11 this zero/one pattern.

12 This is a point made for a long time with
13 things like the fixed effects in the regression
14 models. It's been claimed at various times that they
15 have to be volume driven, but how can a variable that
16 is one in every period capture the effects of a
17 variable that can be easily shown to fluctuate
18 regularly?

19 Again, I think that the blunt instrument
20 critique I think is just not a reasonable
21 characterization of what dummy variables do. They're
22 not a universal tool in particular when other data are
23 available, but they are very widely used and for good
24 reason because of the need to control for categorical
25 factors is common in econometrics.

1 Q I believe you said that if you have other
2 data that could account for in this case differences
3 in composition that one would use that rather than a
4 dummy variable?

5 A You might. It would certainly depend on the
6 nature of the data that were available.

7 Q Could you look at page 68 of your testimony
8 and in particular Table 10?

9 A I have it.

10 Q Is this an analog of Professor Roberts'
11 Table 1?

12 A Not exactly. I would regard it as a
13 supplement to Professor Roberts' Table 1.

14 Q Do you have a copy of Table 1?

15 A I do.

16 Q Does Table 1 show that FHP and TPF in
17 different operations don't rise proportionately? Is
18 that correct?

19 A Well, Professor Roberts' Table 1 shows that
20 in some cases statistically they do; in others,
21 statistically they don't and the variations are in
22 both directions, depending on the operation. Although
23 at the same time as I had discussed in my testimony,
24 I don't believe Professor Roberts used an appropriate
25 model to measure the effects that he's purporting to

1 show.

2 Q In your Table 10, you've combined all the
3 various operations. Is that correct?

4 A That's correct. As the shape indicates,
5 these are aggregates of letter and flat volumes.

6 Q If we just focus on the letters, your
7 presentation doesn't and can't show how FHP and TPF
8 rise or fall together in a specific operation,
9 correct?

10 A That's correct because it's extraordinarily
11 difficult to specify a model that properly reflects
12 all the mail flows that go into TPF in a particular
13 operation.

14 MR. COSTICH: No further questions,
15 Mr. Chairman.

16 CHAIRMAN OMAS: Thank you, Mr. Costich.
17 Mr. McKeever?

18 MR. MCKEEVER: Thank you, Mr. Chairman.

19 CROSS-EXAMINATION

20 BY MR. MCKEEVER:

21 Q Dr. Bozzo, beginning on page 12 of your
22 rebuttal testimony, you addressed Dr. Neels' testimony
23 that a comparison of IOCS tallies with the MODS data
24 shows that there is a mismatch between IOCS and MODS.
25 Is that correct?

1 A Well, I described a response to Dr. Neels'
2 analysis which purported to show mismatches whose
3 magnitude I don't agree that he correctly
4 characterized.

5 Q Now, in other words, according to Dr. Neels,
6 the IOCS data shows a number of instances where a
7 postal employee was clocked in a different MODS
8 operation than the MODS operation in which the
9 employee is working. That's what we mean by the
10 mismatch. Is that right?

11 A That was what Dr. Neels was looking at.
12 Yes.

13 Q Now, you don't disagree that that does
14 happen?

15 A Yes, certainly it may.

16 Q Not only it may, it does. Is that correct?
17 Okay. And on page 14 of your rebuttal testimony in
18 your Table 1, you show what you believe to be a better
19 comparison of the extent to which there is such a
20 mismatch. Is that correct?

21 A That's correct.

22 Q Okay. Let me make sure I understand your
23 Table 1. The first column there shows the number of
24 instances where the worker was correctly clocked in to
25 the MODS cost pool in which the worker was actually

1 working. Is that correct?

2 A Again, by same activity, I mean that the
3 IOCS question 18 activity showed that the employee was
4 working with the same equipment as the MODS operation
5 number that was recorded on the tally.

6 Q Okay. Now, the second column you call
7 related sorting activity. I take it from your
8 footnote 1 that this shows the number of instances in
9 which the sampled worker was, for example, clocked in
10 the DBCS cost pool but may have been working either in
11 the DBCS cost pool or the OCR cost pool. Is that
12 correct? It's in one or the other?

13 A Well, it would be -- in the case of the DBCS
14 cost pool, this would be observations where the
15 employee was working in the OCR cost pool, that being
16 the residual of automated letter sorting activities.
17 Again, the notes to the table indicate which
18 categories of operations I considered to be related.

19 Q Okay. Let me see if now I understand it.
20 So that for the DBCS line, there were 27,400 tallies
21 where the worker was clocked in the DBCS cost pool,
22 but was actually working in the OCR cost pool?

23 A As indicated by the question 18 response.

24 Q Okay.

25 A IOCS does not say that somebody was working

1 in a particular cost pool. IOCS includes the data
2 collector's recording of what equipment they were
3 working with.

4 Q Okay. So let me restate it. Go ahead.

5 A I'm sorry. So they said -- this could come
6 up for a letter operation one of two ways. They could
7 have said that the employee was working with OCR
8 equipment of some sort or they could also have
9 selected the other response, in which case they're
10 asked to provide a description of the equipment that
11 the employee was working with. Particularly, it's
12 other automated letter equipment. And I did not go
13 through the remarks field in the IOCS to determine the
14 extent to which those remarks actually said that they
15 were working a piece of DBCS equipment, which would be
16 correct. I put them in the related category.

17 Q But the related category does include
18 instances where a worker was clocked in to the DBCS
19 MODS cost pool but was working with OCR equipment.

20 A Potentially. Again, I have not looked at the
21 remarks field, so I'm just saying that any automated
22 letter equipment, whether it was actually DBCS or an
23 OCR, I put into the related and not the same category.

24 Q Well, if he was working with DBCS, I assume
25 that that tally would show up under the same activity

1 column, wouldn't it?

2 A Again, because I didn't look at the remarks
3 field, I put those under the related so that without
4 having examined the remarks I would not overstate the
5 amount that was the same.

6 Q Do you don't know how many of those
7 tallies -- with respect to how many of those tallies
8 the worker was in the OCR, was working with OCR
9 equipment when he was logged in to the DBCS cost pool?
10 Is that right?

11 A I do not know how much. It happens both
12 ways.

13 Q Now, it is true that if a worker is clocked
14 in to the OCR cost pool, for example, but is actually
15 working in the DBCS activity, that is a misclocking?
16 Is that correct?

17 A Could you repeat the question?

18 Q Sure. If a worker is clocked in to the OCR
19 MODS cost pool, for example, but is actually working
20 with DBCS equipment, that worker is misclocked. Is
21 that correct?

22 A That's correct.

23 Q Even though the two activities are quote
24 related unquote in the sense that both activities
25 involve automated letter sorting activities under your

1 Table 1. Is that right?

2 A That's correct. Again, I'm attempting to
3 characterize the scope of the misclocking, both in
4 terms of rate and the types of operations where the
5 employees do appear.

6 Q Okay. For the OCR row in your table, for
7 example, the table shows that there were 43,227
8 instances where the sampled worker was clocked into
9 the OCR MODS operation but may have been working with
10 DBCS equipment. Is that correct?

11 A No, that's not correct. The 43,227 is not
12 the number of instances. It is the weighted tallies
13 expressed in thousands of dollars.

14 Q Okay. These are dollars?

15 A These are all dollar weighted IOCS tallies
16 in the same activity, related sorting activity and
17 other sorting activity columns.

18 Q Okay. They're IOCS tallies, but weighted by
19 dollars?

20 A Correct.

21 Q Okay. So to make sure I understand it,
22 then, the table shows that there were 43,227 dollar
23 weighted IOCS tallies where the sampled worker was
24 clocked in to the OCR MODS operation, but may have
25 been working with DBCS equipment. Is that correct?

1 A Again, that's what question 18 says.

2 Q That's about 23 percent, if I did the math
3 right, the 43,227 is about 23 percent, of the OCR
4 tallies in columns 1 and 2. Does that look about
5 right, 43,000 tallies over a total of about 184,000?

6 A Yes, that's about right.

7 Q And then we have 3398 tallies where the
8 worker was clocked in to the OCR MODS operation, but
9 was actually working in something -- that's clearly a
10 mismatch, that column, isn't it, other sorting
11 activity, or am I wrong on that?

12 A Well, that is -- again, that is a mismatch.
13 It's not in related sorting activity but, as the table
14 shows, those range from about 1 to 6 percent with an
15 average of 3 percent of the sorting time.

16 Q Now, you do present different variability
17 estimates for the DBCS and the OCR operations, don't
18 you?

19 A I do.

20 Q In other words, you treat them separately in
21 your econometric analysis. You do a DBCS estimate and
22 then you do an OCR estimate separately?

23 A I do.

24 Q Let's go down to the manual operations in
25 your Table 1 just to make sure I have this straight.

1 You treat the manual flats operation, the manual
2 letters operation, the manual parcels operation and
3 the manual priority operation all as related sorting
4 activities, related to each other, for purposes of
5 this table?

6 A I do.

7 Q You did analyze each separately in your
8 econometric analysis, correct?

9 A That's correct.

10 Q Now, looking at your Table 1 for your manual
11 parcels, there are 16,321 dollar weighted IOCS tallies
12 where a worker was clocked in to the manual parcels
13 operation but could very well have been working in
14 either the manual letters operation or the manual
15 flats operation or the manual priority operation. Is
16 that correct?

17 A That's correct, although I believe that the
18 majority of those are in non-letter responses.

19 Q I see. The majority are in either manual
20 flats or manual priority?

21 A Correct.

22 Q Okay.

23 A Which is basically what you would expect, if
24 the data collector happened to catch somebody sorting
25 a piece of an unusual shape for the operation that

1 nevertheless certainly would be able to be processed
2 manually. In general, the issues of machine
3 compatibility with pieces are not the same between
4 manual and automated operations, so it's less
5 surprising that you would see a scattering of
6 responses like this.

7 Q But to be clear, what your table means, if
8 the worker was clocked in manual parcels but was
9 observed doing manual letter operations, that would
10 turn up in your related sorted activity column. Is
11 that right? For manual parcels?

12 A Right. And the question would be what's the
13 meaning of the question 18 response. Exactly.

14 Q Okay. And that 16,000-something is about 20
15 percent of the total of the dollar weighted tallies in
16 columns 1 and 2. Does that look right to you?

17 A That is correct, although it should be noted
18 that the manual parcels operation is itself only a
19 couple of percent of the costs under analysis here.

20 Q It makes a difference to manual parcel users
21 in costs, though, doesn't it? People who send
22 parcels?

23 A It could.

24 Q For related activities, what fraction of the
25 tallies identify a specific activity as opposed to the

1 other category that you described earlier?

2 A I think a majority identify specific other
3 activity.

4 Q Okay. When you say a majority, a
5 substantial majority?

6 A I'd say a substantial majority.

7 Q A substantial majority? More than 75
8 percent?

9 A I don't know.

10 Q But substantially more than 50 percent?

11 A Yes.

12 Q Now, in Table 1, of course, the situations
13 we've been discussing are situations where there are
14 IOCS tallies that show what operation a worker is
15 clocked in to as opposed to what equipment the worker
16 is actually working with, right? We're only dealing
17 with IOCS tallies here, what they show us?

18 A Correct. I mean, the IOCS tallies are the
19 source of the actual activity by employees in these
20 operations.

21 Q That's the only measure we have of the
22 extent of maybe misclocking. Is that correct?

23 A Short of doing a time and attendance audit.

24 Q The substantial majority of the tallies in
25 the related sorting activity actually identify

1 specific equipment, I think we agreed on that a minute
2 ago?

3 A Yes.

4 Q Okay. Then those again are instances where
5 there's clearly misclocking. Is that correct?

6 A Again, it depends on exactly what the IOCS
7 data were telling us. As I state on page 15, the IOCS
8 data themselves are not perfect.

9 Q Assuming the IOS data are accurate, then, in
10 other words.

11 A Right. But, of course, you could say
12 assuming the MODS data were accurate as well. The
13 bottom line is that 93 percent of the observations
14 show the same activity. Another 4 percent or so for
15 this collection of cost pools show a related activity
16 and 3 percent show everything else. We're dealing
17 with, again, a sampling system where data collectors
18 have to enter a lot of keystrokes and make fairly
19 complicated judgments as to what they're seeing.

20 Q So the data collector could get it wrong?

21 A As I say, I believe that IOCS is generally
22 reliable, but it is a system in which human beings
23 enter the data and can potentially make errors, so
24 that when you're talking about in the end errors of a
25 couple of percentage points when 93 percent of the

1 observations are consistent, I think that when you
2 consider what the limits of data collection are that
3 the correct conclusion to draw is that the systems are
4 substantially in line.

5 Q Well, it's not a question of whether the
6 systems are substantially in line, but it's a question
7 of when you econometrically model DBCS, are you
8 including in there data, for example, DBCS, where a
9 worker is clocked in to another operation. I don't
10 want to argue with you, I don't think there's any need
11 to argue.

12 There are instances where volume in your
13 data set is recorded for a quarter but there are no
14 labor hours recorded for that quarter. Is that
15 correct?

16 A Again, it depends on how you define --
17 I believe you're changing tacks here.

18 Q Yes. I apologize.

19 A I believe you're referring to the MODS data.

20 Q Yes, I am.

21 A The answer is that that does occur at
22 generally low frequencies, where how low the frequency
23 is depends on what level you aggregate the data.

24 Q That can happen when an employee is clocked
25 in to a wrong operation, can't it?

1 A That would be one possibility.

2 Q Or because the hours never got recorded at
3 all for some reason. Is that right?

4 A Hours never recorded at all I think would be
5 less likely.

6 Q Possible but less likely than misclocking?

7 A Well, because the employees would presumably
8 expect to be paid for the hours that they worked, so
9 they would have presumably punched a clock somewhere.

10 Q Okay. Sometimes clocking data that exists
11 doesn't get uploaded into the system. Is that right?

12 A It's possible. And with any automated
13 system, there's the possibility of data transmission
14 failures.

15 Q Could you turn to page 42 of your testimony,
16 please?

17 A I have it.

18 Q In the first sentence there, you indicate
19 that Dr. Neels was incorrect in claiming in his
20 testimony that he lacked data suitable to estimate the
21 model for allied labor operations. Do you see that?

22 A That's correct. I see that.

23 Q And you refer to page 49 of his testimony.
24 Do you happen to have his testimony with you?

25 A I don't.

1 Q Okay. But do you recall that that's the
2 footnote where he said he was surprised when he asked
3 for that data and the Postal Service objected?

4 A Yes.

5 Q So you are talking about data then -- you
6 say he did have data that the Postal Service objected
7 to providing. Is that correct?

8 A I'm saying that in the library reference 56
9 data set there was data that was a subset or that
10 could be viewed as a subset of -- in fact, a small
11 subset proportionally -- of what was requested in
12 those UPS interrogatories. The issue was that he
13 asked for various work hours for all functions as
14 defined by groups of labor distribution codes in the
15 NWRS, National Work Hour Reporting System,
16 classification of activities and because they are used
17 in the econometric models for mail processing, certain
18 work hours and dollars for certain labor distribution
19 codes within one of the functions actually were
20 provided and were available to him from the start, in
21 particular, for the allied labor code.

22 Q But the Postal Service objected to providing
23 it and didn't tell him he already had it. Is that
24 correct?

25 A You weren't asking for it.

1 Q We weren't asking for it? Okay.

2 A No.

3 Q Okay. Thank you.

4 A You asked for --

5 Q Something different?

6 A You asked for something different and we
7 responded to the question that you asked.

8 Q Okay. Thank you.

9 A And, again, in particular, the Postal
10 Service as an institution responded to the questions
11 that you asked when you propounded them as
12 institutional interrogatories.

13 Q Now, on page 42, you show the results of an
14 analysis you did using Dr. Neels' plant level
15 approach?

16 A That's correct.

17 Q And the data you used for that analysis is
18 national work hour reporting system data?

19 A That's correct.

20 Q It's for LDC codes -- is that 11 through 14
21 and 17?

22 A Well, in Table 7 I report results in two
23 columns. One is for LDC 17 alone and then the other
24 is for a composite of mail processing including LDCs
25 11 to 14, where LDCs 11 to 14 are the LDCs that cover

1 the distribution operations that were covered by the
2 econometric analyses by myself, Professor Roberts and
3 Dr. Neels. It also includes some other mechanized
4 non-letter and non-flat operations in LDC 13 and that
5 also includes the allied labor from LDC 17.

6 Q Is there comparable hours information in
7 MODS?

8 A There is.

9 Q These are two different systems, though,
10 right, MODS and NWRS?

11 A They are two different but relatively
12 closely related system.

13 Q Okay. Why didn't you use the MODS data in
14 doing your analysis instead of using the NWRS data?

15 A Because the NWRS data was in my data set and
16 I would have had to have exerted a fair amount of
17 effort of my staff in rolling up the MODS data
18 comparably.

19 Q Now, in Dr. Neels' plant level model, he
20 presents alternative results, doesn't he, one based on
21 a data set developed from using strict standards of
22 data quality and one using data developed by applying
23 looser data quality standards? Is that correct?

24 A That's correct.

25 Q And the results you show in Table 7, which

1 data set do you use? The one using the strict
2 standards of data quality or the looser data quality
3 standards?

4 A Well, I don't agree with Dr. Neels'
5 characterization of strict and loose standards.
6 I used his larger sample which he terms the looser
7 standards in part because what he terms the stricter
8 criteria which, as I explained at some length,
9 I consider to be inappropriate and excessive. He gets
10 a sample that covers about 125 plants for an average
11 of six quarters a piece, whereas in the larger sample
12 at least he has, I think, about 220 to 240 plants
13 which is a broad enough characterization of the system
14 that I don't need to worry about the identities of the
15 plants that are in the sample. So in sort, the reason
16 why I used his broader screen is that even though
17 I consider that to be rather excessive in itself, it
18 was the least objectionable of his two options and the
19 one that allowed me to estimate the model in such a
20 way that it covered a reasonably broad collection of
21 the underlying costs.

22 Q Okay. To make sure we're communicating,
23 then, let's use larger sample and smaller sample. Is
24 that okay?

25 A Sure. I used the larger sample.

1 Q Right. Okay. Now, you did also estimate
2 the model using Dr. Neels' smaller sample, didn't you?

3 A I don't recall.

4 Q Well, do you have your library reference 192
5 with you?

6 A I do.

7 Q Okay. Could you go to the part of that
8 library reference that is labelled USPS
9 Mod_output_LDC.log?

10 A I see that. Okay. I have it.

11 Q And, in particular, if you could take a look
12 at pages 18 -- well, I don't know if your pages are
13 labelled. Are your pages labelled?

14 A Yes, I do see that those regressions were
15 run, although my pagination differs.

16 Q Okay. The variabilities you found using the
17 smaller sample were in the area of 100 percent,
18 weren't they?

19 A That is correct. However, because of the
20 increased sampling imprecision of the estimates from
21 the smaller sample, those results are not actually
22 significantly different from the results that are
23 reported in Table 7 for LDC 17.

24 Q And what are you reporting in Table 7, what
25 variabilities?

1 A In Table 7, the elasticity is .84 with a
2 standard error of .07 and that's for LDC 17. The
3 result from the smaller sample is 1.094, however, the
4 standard error is .15, so the .84 is included in the
5 confidence interval for the estimate for the smaller
6 sample.

7 Q Okay. Thank you. Could you turn to page 23
8 of your testimony, please?

9 A I have it.

10 Q There, you refer on line 9 to screening with
11 FHP and in various parts of that page and the top of
12 the page you talk about Dr. Neels' TPH FHP and TPF FHP
13 screens, for example, on lines 18 and 19. Do you see
14 that?

15 A I do.

16 Q There, you're talking about the section of
17 Dr. Neels' testimony where he was showing instances
18 where FHP was greater than TPH or TPF. Is that
19 correct?

20 A That's correct.

21 Q So he was talking about the quality of the
22 data?

23 A Well, he was identifying what he termed
24 anomalies from which he drew some data quality
25 inferences that I don't think are warranted.

1 Q I understand, but that's what he was talking
2 bout, data quality?

3 A Yes.

4 Q Okay. Now, you used the word screens there.
5 Did Dr. Neels use the results of any of that analysis
6 where he showed instances where he believed FHP was
7 greater than TPH or TPF in his plant level analysis?

8 A He did not. He was using those to
9 characterize the MODS data quality outside of that
10 particular analysis.

11 Q So we shouldn't confuse your use of the word
12 screens there with screens that Dr. Neels actually
13 used when he did his analysis. That's correct?

14 A That's correct. He did not use those
15 screens and he doesn't why he didn't use them.

16 MR. MCKEEVER: I have no further questions.

17 CHAIRMAN OMAS: Thank you, Mr. McKeever.

18 Mr. Olson?

19 MR. OLSON: Thank you, Mr. Chairman.

20 CROSS-EXAMINATION

21 BY MR. OLSON:

22 Q Dr. Bozzo, I want to focus on your rebuttal
23 to Dr. Haldi's testimony and ask you to look at your
24 testimony on page 2, lines 14 and 15. You say -- I'm
25 going to delete a couple of words, "I do not claim

1 that the elasticities I measure provide information on
2 economies of scale." I think that holds as a concept,
3 doesn't it, what I just read?

4 A Yes. That's what I say. Again, with the
5 deletion of some extraneous words.

6 Q Okay. And on page 2, a little above that,
7 lines 8 and 9, you say Dr. Haldi's criticism of the
8 Postal Service models as failing to provide
9 information on economies of scale is beside the point
10 of the analysis, correct?

11 A That's my statement there.

12 Q Are you saying that Dr. Haldi's discussion
13 of economies of scale is misdirected in this docket
14 and that it would be perhaps more relevant in another
15 docket like the N docket that has been pending at the
16 commission that deals with -- well, I think you know
17 what the docket is.

18 A I am familiar with the N2006-1 proceeding
19 generally. I do believe that issues of economies of
20 scale and density are of greater interest in
21 evaluating the cost consequences of facility
22 consolidation than for estimating the marginal costs
23 of individual postal products.

24 Q And, in fact, on lines 15 and 16, you say
25 that your analysis and your elasticities bear on the

1 concept of economics of density, correct?

2 A Economy use of density.

3 Q Okay. And page 4, line 8, you say it's not
4 surprising that there could be economies of density
5 for large and small facilities alike.

6 A That's correct.

7 Q And then you say in the last sentence, "It
8 would be expected that facilities of all sizes would
9 have operations that are not operating exactly at
10 capacity." Right?

11 A That's what I state.

12 Q Okay. And then you have an interesting
13 analogy to an airline beginning on line 15. You say,
14 "It is in fact not unlike observing that an airline
15 can lower its average costs by filling otherwise empty
16 seats on both a 150-seat jet and on a 400-seat jumbo."
17 Right?

18 A That's what I state.

19 Q Okay. Let me use this analogy to clarify
20 some of the testimony. I'm aware that airplanes often
21 fly with empty seats, correct?

22 A They used to.

23 Q It may not seem that way any more, but you
24 will still see some empty seats on planes, correct?

25 A Yes.

1 Q And it seems almost self-evident that as
2 long as an airplane, small or large, has empty seats
3 that the marginal cost of carrying an extra passenger
4 and filling that empty seat is rather low, just as you
5 say. Correct?

6 A That's generally what I meant.

7 Q Let me pose a hypothetical here. Let's
8 suppose that the airline is flying a 150-seat jet
9 between two cities and in my hypothetical, suppose the
10 airline has a monopoly on the route, just like in the
11 old days with the CAB, and it's required to service
12 all of the average traffic flow between two cities.
13 Until the average daily traffic flow hits the 150
14 passengers, the airline obviously has no problem. In
15 fact, until the plane is full, the more passengers the
16 better because of the concept of economics of density
17 that you cite, correct?

18 A Correct.

19 Q What happens in this hypothetical if the
20 average daily traffic increases to the point where the
21 airline can expect 170 passengers and its plane seats
22 150 and I ask you to recall that in my hypothetical
23 the airline had a monopoly and had the duty to serve
24 the additional traffic flow?

25 A Well, it depends on significant unstated

1 details of your hypothetical. The airline may add a
2 second flight or it may substitute a larger plane. So
3 the answer is that the effect on cost depends on the
4 relative economics of those options.

5 Q Those are the basic options, right? It
6 either replaces the 150-seat plane with a plane that
7 has more seats or it puts on a second plane, correct?

8 A That's correct.

9 Q So once the airline can expect the 150-seat
10 capacity of the existing airplane to be exceeded on a
11 regular basis, where or how do economics of density
12 fit into that situation?

13 A Well, in that situation, again, depending on
14 the details of the airline, they may operate two
15 flights or they may operate one flight with a larger
16 jet providing some capacity that is sufficient to take
17 on the new level of traffic. At that point, it will
18 again fly its 190-seat jet or its pair of 100-seat
19 jets with some number of empty seats. And, once
20 again, the process repeats itself where it can benefit
21 from increasing the density in the new service
22 configuration, until it fills the available seats on
23 the planes and then, again, we have the decision to
24 make again as to whether to add a flight or to
25 substitute a larger plane.

1 Q Okay. Let's go through those sequentially,
2 the different options. Let's suppose that the airline
3 could replace the 150-seat plane with a 200-seat plane
4 and that on that plane it had slightly higher total
5 operating costs but it would have a lower unit cost
6 per seat mile -- per seat mile flown perhaps it the
7 way they say it. Can you accept that?

8 A It's certainly the case that the saturation
9 of the capacity on the smaller plane could lead to the
10 airline seeing the cost being lower and not higher
11 after the transition.

12 Q And, in fact, in that instance within the
13 range of traffic increase that we're discussing, the
14 airline could be said to benefit from economies of
15 scale on account of the lower seat costs per mile
16 that's associated with the larger aircraft, correct?

17 A I think you just said that.

18 Q Okay. And after the airline started
19 operating this 200-passenger jet on the route, on any
20 day when it was not full would you agree that the
21 airline, then, again would have economies of density?

22 A That's true. I mean, economies of scale and
23 economies of density are not mutually exclusive
24 concepts.

25 Q Let's change the hypothetical just a bit and

1 suppose that they can only run a 150-seat jet, that's
2 as big as the planes get and to handle the extra
3 traffic the airline has to acquire a second identical
4 150-seat jet and the operating costs per seat mile of
5 the second jet is the same as the existing jet. Under
6 that circumstance, would you say the airline is
7 subject to economies of scale?

8 A I think you've constructed your hypothetical
9 such that it doesn't, although it doesn't seem to
10 be -- I don't exactly see how the limitation is
11 relevant to the real world, since the constraint on
12 the scale of the operation doesn't exist in airlines
13 and it doesn't exist by extension in the Postal
14 Service either.

15 Q Well, we'll get to the Postal Service, but
16 at the moment we're trying to finish the airlines.

17 A I guess what I'm telling you is you've
18 constructed the question so that it answers yourself,
19 but I don't think that the hypothetical is very
20 realistic.

21 Q Okay. But it's true that in the
22 hypothetical that there are no economies of scale here
23 because the average mile cost per seta has not
24 declined as the capacity has increased, correct?

25 A Correct. Again, you've structured your

1 hypothetical that way.

2 Q That's the way the hypothetical is designed.
3 And after the airline acquires that second 150-seat
4 aircraft in this hypothetical, on most days one or
5 both of the two jets would probably have empty seats
6 and on those days the airline would have economies of
7 density, correct?

8 A Again, I think that you would generally have
9 the ability to -- that in general they would operate
10 with empty seats and they would have the ability in
11 general to conceivably fill to capacity.

12 Q Okay. Let's go back to postal, which you
13 wanted to do a second ago. Let's --

14 A I didn't say that I wanted to.

15 Q I thought you were eager to. Let me ask you
16 this. Do DBCS machines have a wide variety of sizes
17 and capacities the way that aircraft do?

18 A Yes and no. Strictly speaking, there are
19 various sizes of DBCSs. I understand that they differ
20 somewhat in the number of output bins that they can
21 have. All DBCSs, as I understand it, are fairly
22 similar, for instance, in the number of pieces per
23 hour they can process in a given processing mode. A
24 considerable difference between operating a DBCS and
25 operating an airliner is that operating a DBCS for

1 half a shift may be what is necessary to process the
2 mail that the operational plan puts in it, whereas
3 flying a plane on an airline route from here to
4 Chicago, flying the plane somewhere to the panhandle
5 of Maryland does not constitute sensible output for
6 the airline. So DBCS is a relatively uniform piece of
7 equipment in terms of throughput. They vary in some
8 other important ways, but the way they're used is
9 quite different from an airliner. The common thread
10 is that once you've installed a certain amount of
11 capacity, to the extent that there are fixed costs,
12 then it pays to fill the capacity and spread out the
13 fixed costs more broadly on the margin.

14 Q Let me break this down also and ask you when
15 a Postal Service plant exceeds the economies of
16 density and has to provide more capacity to serve
17 growth in the volume of mail, its basic option is to
18 acquire one or more additional machines that are
19 similar to the machines it now has in terms of
20 operating capacity and speed throughput, correct?

21 A That's correct.

22 Q Would you expect that the new sorting
23 machines which are identical or similar to the
24 existing sorting machines to have set up and take down
25 costs that are more or less in line with the existing

1 machines?

2 A Not generally.

3 Q And can you tell me why?

4 A Well, for instance, in some operations, the
5 Postal Service has programs that are meant to try to
6 reduce those costs, for instance, the automated tray
7 handling system on the automated flat sorting machine
8 100. Obviously, you're talking about a change in
9 technology here.

10 Q Okay. If I limit it to DBCS equipment,
11 which is what I started with, does that help your
12 answer simplify?

13 A Well, again, it depends on what the optimal
14 configuration of the plant is with the additional
15 machine.

16 Q Well, what I'm trying to get at is in
17 general terms, if you bring in a similar or identical
18 machine to handle the new volume, are you going to
19 have set up and take down costs that are similar to
20 the existing machines?

21 A Probably.

22 Q Okay. Could you look at page 6 of your
23 testimony on lines 5 and 6 where you say, "Dr. Haldi's
24 argument fails for several interrelated reasons.
25 First, the set up costs clearly are not volume

1 variable, i.e., attributable as marginal costs."

2 Correct?

3 A Correct.

4 Q Did Dr. Haldi's testimony discuss the
5 treatment of set up costs on the assumption that the
6 commission might determine them to be volume variable
7 or non-volume variable?

8 A I believe what he was discussing was the
9 treatment of the costs if they were determined to be
10 non-volume variable. However, he attempted to suggest
11 reasons why the treatment of them as volume variable
12 costs might nevertheless be adequate.

13 Q Did he at any point in his testimony assert
14 that all set up costs are in fact volume variable,
15 contrary to your assertion that they are generally
16 non-volume variable?

17 A Well, I didn't say that he was claiming that
18 they were entirely volume variable. In fact,
19 I believe that his testimony correctly interpreted
20 reinforces the points they are not. What this
21 statement is modifying is the end of the paragraph at
22 the top of page 6, dealing with Dr. Haldi's suggestion
23 the commission could treat these non-volume variable
24 costs the same way that it treats the volume variable
25 costs and be just as well off.

1 Q In terms of attribution you mean?

2 A Yes.

3 Q Okay. At page 6, line 7, you continue there
4 and you say, "Second, a significant portion of the set
5 up costs Dr. Haldi discusses cannot be assigned to any
6 class of mail as incremental costs." Correct?

7 A That's correct.

8 Q Dr. Haldi distinguished between the set up
9 costs that were essentially for a single class of mail
10 versus the set up costs that are for two or more
11 classes of mail, did he not?

12 A I believe he did.

13 Q And based on his distinction, sorting a
14 single class versus sorting two or more classes, did
15 he make any attempt to quantify how many or the
16 percentage of sort schemes that are essentially for a
17 single class versus what percentages are for multiple
18 classes?

19 A I don't believe he did.

20 Q And you did not either, correct, in your
21 testimony?

22 A Well, I reference Mr. McCrery's
23 interrogatory responses that did quantify how many
24 schemes are run on the incoming versus outgoing sides.

25 Q Okay.

1 A But, again, the bottom line is that this
2 comment goes to the question of the equivalence
3 between the volume variable and the incremental cost
4 methods and the distribution of the costs as volume
5 variable costs is going to be very different from the
6 distribution as incremental costs and when Dr. Haldi
7 is in effect recommending attribution of those costs
8 using volume variable cost methods, then I think the
9 burden is on him to make this showing.

10 Q What I'm trying to do is clarify what your
11 criticism is so that we can --

12 A That's what I'm criticizing. These
13 non-volume variable costs, if he agrees that they are
14 non-volume variable, which he should, should not be
15 attributed like they are in fact 100 percent volume
16 variable costs.

17 Q And, in fact, that is the key criticism he
18 is making of your direct testimony, correct?

19 A Right. But the thing is that it's
20 completely inconsistent to then go back and say that
21 if the commission just treated these costs as 100
22 percent volume variable that it would be back in the
23 same position as if it did a careful incremental cost
24 analysis at the subclass level.

25 Q Let me ask you this. If the commission

1 treats all of mail processing costs as attributable,
2 the issue doesn't come up, does it?

3 A Well, hypothetically, then, there are no
4 non-volume variable costs to deal with. However, his
5 analysis shows that there are non-volume variable
6 costs to deal with and so I think that's the world
7 we're dealing with.

8 Q Okay. Let's look at your next criticism
9 here. This is the same sentence, line 8. You say,
10 "Even those costs that may be class specific are not
11 in general incremental costs of any subclass."
12 Correct?

13 A That's correct.

14 Q Suppose you have an incoming sort that's
15 being done of a single subclass of mail such as
16 standard and that commercial standard and non-profit
17 standard subclasses are sorted together, are merged
18 and sorted together, okay?

19 A Okay.

20 Q Let me back up. If only standard regular
21 mail is being sorted, you agree that the costs are
22 incremental to standard regular, correct?

23 A Hypothetically they would, but processing
24 single subclasses of mail like that is not what
25 I understand the Postal Service's operations to do.

1 Q Okay. If you want to consider it a
2 hypothetical, that's fine. If only standard regular
3 mail is being sorted, you'd agree that the set up
4 costs are incremental to standard regular, correct?

5 A Hypothetically. However, it's an
6 unrealistic hypothetical.

7 Q I just want to make sure you've answered it
8 and you have. Thank you. But back to your testimony,
9 are you saying that whenever two subclasses are being
10 sorted you have no way to determine what portion of
11 the fixed set up costs are incremental to commercial
12 regular subclass? This is my assumption that you're
13 sorting commercial regular and non-profit regular at
14 the same time. You're saying that because those two
15 subclasses are being sorted together and there's no
16 way to determine the portion of the fixed set up costs
17 that are incremental to commercial regular versus
18 non-profit regular that you cannot attribute them?

19 A That's correct. Again, the costs in this
20 case are fixed to the entire volume of commercial and
21 non-profit standard. Again, because you have to
22 eliminate the entire standard mail volume to eliminate
23 the set up costs in this hypothetical, the set up
24 costs are incremental to neither standard regular nor
25 standard non-profit nor -- because they would probably

1 be in there, too, to some extent, nor standard ECR.

2 Q Well, in my hypothetical I'm dealing with
3 standard regular and standard non-profit. You
4 understand that?

5 A I do.

6 Q And your answer stays the same even though
7 the costs are clearly incremental to the two standard
8 regular subclasses combined.

9 A That's correct. In incremental costing,
10 there's no causal way of assigning these costs to the
11 individual subclasses.

12 Q Okay. Well, let's go to page 9 and see if
13 this is helpful. In the paragraph that runs from
14 lines 5 through 12, you're discussing there, I think,
15 subclasses within a single class of mail and this is
16 an elaboration of what we've just discussed on page 6,
17 correct?

18 A It's basically what we just discussed in
19 different words.

20 Q Okay. Here you have costs that are clearly
21 by your own admission a moment ago incremental to
22 standard regular because they're regular commercial
23 and regular non-profit and yet you're saying they
24 should be treated as institutional costs and not
25 attributed to standard regular mail because you can't

1 identify the portion that's incremental to the
2 commercial and non-profit subclasses. Isn't that what
3 you're saying?

4 A That's not correct. I'm stating that if
5 hypothetical there were class-specific scheme related
6 costs those could be considered incremental costs of
7 the class. However, they would not be incremental
8 costs to the subclasses, is what this is saying.

9 Q Okay. That's right. It's incremental to
10 the class of standard, but not incremental to the
11 subclass of standard regular or standard non-profit
12 regular, if I've got the terms right, and so therefore
13 should not be attributed. Correct?

14 A Should not be attributed to the subclasses.

15 Q Exactly. If it's not attributed to the
16 subclasses, it's basically not attributed to the
17 class, though. Isn't that correct?

18 A Well, it depends on the incremental cost
19 model. The incremental cost model identifies portions
20 of non-volume variable costs that it does attribute
21 under various theories to classes and subclasses as
22 incremental costs.

23 Q Well, is that incremental cost model used to
24 attribute cost to any class of mail?

25 A It is used to attribute costs to classes and

1 subclasses of mail in the incremental cost sense.

2 Q In the incremental cost sense meaning as a
3 test for cross subsidy but not as a way to build up
4 the costs to determine rates?

5 A Well, the purpose of the incremental cost
6 model and its results in the Postal Service's analysis
7 is to conduct tests for cross subsidy and that is,
8 I believe, the purpose to which Dr. O'Hara puts it.
9 As Dr. Bowmill explained to the commission back in,
10 I believe, Docket No. R87-1, marginal and incremental
11 costs have conceptually different roles in determining
12 what appropriate prices for postal products are.

13 Q So the answer is that the Postal Service's
14 incremental cost model is not used to attribute any
15 costs to a class of mail, correct?

16 A No. I'm saying that the Postal Service's
17 incremental cost model is used to measure incremental
18 costs, that the results of the incremental cost model
19 are used to conduct cross-subsidy tests as part of the
20 Postal Service's rate policy testimony.

21 Q I understand that, but are you now saying
22 that the Postal Service's institutional cost model is
23 used to attribute costs to classes?

24 A Again, you have to use the correct sense of
25 the term "attribution." There are two distinct

1 economic cost concepts in play: marginal cost, which
2 we usually want to define so that it's equivalent to
3 unit volume variable costs, then incremental costs.
4 It's as close to a tautology as I could say: the
5 incremental cost model is used to measure incremental
6 costs of classes and subclasses; the volume variable
7 cost model and the CRA is used to measure volume
8 variable costs, with the idea that they're equivalent
9 to marginal costs when unitized. Each has its own
10 role in the rate making scheme economically.

11 Q And the role of the Postal Service's
12 incremental cost model is limited to checking for
13 cross subsidy.

14 A And that is the role that incremental costs
15 should have in the rate making scheme.

16 Q Is the Postal Service's cost model, you
17 discuss inframarginal costs on page 6. Is it used to
18 attribute inframarginal costs to any class of mail in
19 the sense -- I don't want to go through the same
20 routine there if we can avoid it, but the answer would
21 be no different if I asked you about inframarginal
22 costs, correct?

23 A Well, at line 13 to 15 of page 8, I state
24 that it's my understanding that the Postal Service's
25 incremental cost model does incorporate an

1 inframarginal cost component in its calculations.

2 Q I'm sorry, could you tell me what you were
3 just referring to? Page 8 --

4 A Page 8, line 13 to 15, where I state, "In
5 fact, Witness Pfeiffer's incremental cost model
6 incorporates inframarginal costs via a constant
7 elasticity approximation to the component cost
8 functions."

9 Q Can you tell me what that means?

10 A Read Dr. Bradley's testimony in Docket No.
11 R2000-1. I'm testifying to you as being generally
12 knowledgeable about postal costs, but he laid out the
13 incremental cost calculations in great detail in the
14 testimony that I reference there.

15 Q Okay. I will search that out as a homework
16 assignment.

17 A I'm glad that it's you getting it and not
18 me.

19 Q Okay. Going back to the illustration of
20 standard regular commercial and non-profit being
21 sorted together and your statement that the costs are
22 incremental to the class but not to either subclass,
23 have you had occasion to examine 3622(b)(3) in the
24 Postal Reorganization Act and 39 U.S.C. 3622(b)(3)
25 which deals with the attribution of costs to different

1 classes of mail?

2 A I'm familiar with the provision, as a
3 non-lawyer might be.

4 Q Right. Do you have a view as to whether
5 your recommendation to the commission is consistent
6 with the language and the spirit of 3622(b)(3)
7 requiring that each class of mail bear the direct and
8 indirect postal costs attributed to that class?

9 A I believe it is. As I understand it, the
10 critical factor is that the attribution of costs
11 should be causal. There are a couple of different ways
12 to make causal attributions of cost. There is the
13 marginal cost sense, again, which we use to basically
14 determine the efficiency of the rates, and then
15 there's the incremental cost sense which is used to
16 determine that users of one particular class of mail
17 aren't being burdened by the costs of other classes of
18 mail. Again, they're both causal attribution methods.
19 They each have their proper role as was described by
20 Professor Bowmill nearly two decades ago. I believe
21 that the correct implementation of that provision of
22 the Postal Reorganization Act makes correct uses of
23 both volume variable and incremental costs in
24 assessing the rate structure.

25 Q And didn't you just say that one of the

1 purposes of (b)(3) in the statute is to avoid having
2 costs that are caused by one class of mail being paid
3 by other mailers?

4 A And that's why the incremental cost test is
5 relevant.

6 Q Okay. So if you believe that these costs are
7 incremental to standard mail, isn't it true that when
8 they're not attributed that they in fact run the risk
9 of being paid by other mailers outside that class
10 because they are treated as institutional costs?

11 A That's a theoretical consideration that, as
12 I explained, is not a serious practical issue that the
13 commission faces. First of all, I think that the
14 amount of non-volume variable costs that would be
15 shown to be attributable to classes in the sense that
16 Dr. Haldi suggests are very small indeed. The second
17 is that even if for the sake of argument we assume
18 that the entirety of these costs were attributable to
19 some class of mail, as I explain on page 10 of my
20 testimony in the first paragraph under heading
21 1(b)(5), even attributing the entirety of these set up
22 and take down costs as incremental costs to a single
23 class of mail would not even come close to altering
24 the outcome of the incremental cost test.

25 Q So let me ask you this. I think you've just

1 fully explained why you think it's not likely or
2 important or relevant, but let me just ask you if it's
3 a big amount or a small amount would you agree that
4 one of the purposes of (b) (3) is to avoid having the
5 costs that are caused by one class of mail, like
6 standard, being paid by people who don't use standard
7 mail?

8 A Yes, I agree.

9 Q Let me ask you to look at page 10, line 16
10 through 20, where you discuss the Postal Service's
11 total non-volume variable cost in sorting operations
12 as 721 million and you compare that with a cost of
13 overhead from first class and standard mail, correct?

14 A I'm comparing the 721 million of non-volume
15 variable costs to the difference between revenue and
16 incremental costs measured for first class and
17 standard mail. Yes.

18 Q Which we would call contributions.

19 A Which we would call contribution over
20 incremental costs. Sometimes contribution may be used
21 with respect to volume variable costs as well.

22 Q Well, I note that each of the classes that
23 you picked in your testimony are known to have a very
24 high coverage and make a large contribution to
25 overhead, correct?

1 A That's correct. They're also the only
2 classes of mail for which Dr. Haldi produces even a
3 theory of why they would be attributable to them.

4 Q Well, let me ask you as to periodicals mail,
5 that doesn't have a high coverage, correct?

6 A That's correct.

7 Q Periodical mailers typically have been able
8 to avoid paying much institutional costs, any of the
9 costs that have not been attributed to periodicals to
10 speak of, correction?

11 A I can't speak to the rate policies that are
12 implemented.

13 Q If it has a very low coverage, we'll leave
14 it at that. And then the parcels class and subclasses
15 within parcels, have they had a high coverage compared
16 to first class and standard?

17 A I believe it varies by different categories
18 of mail, probably lower than average.

19 Q Don't parcel sorting machines have set up
20 costs that you consider to be non-volume variable?

21 A They do. However, parcel sorting machine
22 costs are on the order of tens of millions of dollars
23 system wide.

24 Q Well, how can you be sure that the parcels
25 are covering all the costs that they cause the Postal

1 Service to incur if you don't attribute the
2 incremental costs to them?

3 A Well, parcels are not a class or subclass of
4 mail, so I don't know that the --

5 Q Well, let me say package service and ask the
6 question that way.

7 A Well, then I think you're actually in worse
8 trouble because I believe that there's a fairly
9 significant amount of standard mail parcels that are
10 going to be processed on the parcel sorting machines
11 along with package services material. So you're back
12 into the multiple classes situation where the costs
13 are not even attributable at the class level.

14 Q Well, I'm not sure the degree to which that
15 complicates it. Let's assume before those changes are
16 made, how can you be so confident that if you don't
17 attribute the costs that are incremental to parcels
18 that you've had package services cover its costs?

19 A Well, because costs that may be incremental
20 to parcels generally are not necessarily attributable
21 as either marginal or incremental costs to the package
22 services class. Again, in the case of the parcel
23 sorting machine, you would expect to have standard
24 mail packages and package services packages processed
25 together and so the condition that we're in with

1 respect to Dr. Haldi's description of letter and flat
2 operations is one where multiple classes of mail are
3 routinely merged and when multiple classes of mail are
4 routinely merged you cannot even attribute costs as
5 incremental costs at the class level because
6 hypothetically if you eliminated the package services
7 mail you still have the parcel sorting machines or
8 similar equipment to sort the machinable standard mail
9 packages, assuming arguendo that they still existed.

10 MR. OLSON: All right. Well, it is a
11 complex topic and I thank you for your help.

12 THE WITNESS: You're welcome.

13 MR. OLSON: Thank you, Mr. Chairman.

14 CHAIRMAN OMAS: Thank you, Mr. Olson.

15 Is there anyone else who wishes to
16 cross-examine Witness Bozzo?

17 (No response.)

18 CHAIRMAN OMAS: Are there any questions from
19 the bench?

20 (No response.)

21 CHAIRMAN OMAS: Mr. Heselton, would you like
22 some time with your witness?

23 MR. HESELTON: Yes, I would, Mr. Chairman.
24 About ten minutes would do it.

25 CHAIRMAN OMAS: Very good.

1 MR. HESELTON: Thank you.

2 (A brief recess was taken.)

3 CHAIRMAN OMAS: Mr. Heselton?

4 MR. HESELTON: Yes, Mr. Chairman. The Postal
5 Service has a brief redirect.

6 CHAIRMAN OMAS: Proceed.

7 REDIRECT EXAMINATION

8 BY MR. HESELTON:

9 Q Dr. Bozzo, let me take you back to the
10 discussion that you and Mr. Olson were having that
11 begin with a discussion of airline economics and
12 adding an airplane and that morphed into a discussion
13 of adding a delivery bar code sorter in a plant. My
14 question is this: in adding another delivery bar code
15 sorter, would there be an effect on set up and take
16 down costs for that plant and, if so, what would it
17 be?

18 A The answer is not necessarily. In
19 discussing the subject with Mr. Olson, I was assuming
20 that we were comparing two machines running identical
21 schemes with identical bin utilization, in which case
22 in principle the time required to set up and take down
23 the machine would be the same. However, in the case
24 of the sort of change that we were discussing, that
25 I was discussing with Mr. Olson, if you had a change

1 in volume per delivery point, in effect what you would
2 have is the same scheme spread out over more machines
3 so that while there would be an addition to the
4 machine or an additional machine being employed, the
5 bin utilization which is what would determine the set
6 up and take down costs, is basically determined by the
7 network that's being served and not the volume that's
8 being served over it. So in fact we would expect that
9 the set up and take down costs would vary much less
10 than the variation in machines as additional machines
11 were needed to be brought on line to respond to a
12 increase in volume, other things held equal.

13 MR. HESELTON: Mr. Chairman, that completes
14 the Postal Service's redirect.

15 CHAIRMAN OMAS: Is there anyone --
16 Mr. Olson?

17 MR. OLSON: Mr. Chairman, thank you.

18 RECROSS-EXAMINATION

19 BY MR. OLSON:

20 Q When I asked you the question before about
21 set up and take down, I believe your answer was
22 substantially the same for the second machine and now
23 your answer is not necessarily?

24 A Well, it would be substantially the same for
25 the machine assuming that you are using the same

1 number of bins per machine. My clarification is that
2 when you add a machine you would not be expecting to
3 use the same number of bins per machine in the
4 facility.

5 Q So you're now able to tell us for the second
6 machine that is added as to whether the amount of set
7 up and take down costs for the second machine versus
8 what it would have been for the first machine?

9 A Can you restate the question?

10 Q Yes. We were postulating that the Postal
11 Service purchased another delivery bar code sorter and
12 implemented it and it would be substantially similar
13 to the one that was there before it, correct?

14 A The machine would be similar, but the number
15 of bins being utilized on the machines collectively
16 would also be similar, so that basically the amount of
17 end of run sweeping and the amount of set up would not
18 necessarily change even as the machine was being added
19 because the set up is determined by the network being
20 served and not by the volume served over it.

21 Q So are you saying that even if you had
22 another DBCS in the plant you could have no additional
23 set up and take down costs compared to the first
24 machine in the plant?

25 A It's possible that you could have no

1 additional costs depending on how the schemes were
2 optimally reallocated in this case and in general
3 I would expect that -- while the volume effect on the
4 margin on machines would be small, I would expect that
5 the volume effect on the margin on the set up costs of
6 the machines for the reasons described would be even
7 smaller.

8 Q So to compare them, you would say now that
9 you think that putting the second DBCS machine into a
10 plant would cause set up and take down costs that are
11 less than for the first machine that's in the plant?

12 A That's correct. But again that's making a
13 different comparison to what I was discussing earlier
14 which involved the assumption that you were sweeping
15 the same number of bins per machine, which is not
16 necessarily the case here.

17 Q And if you were sweeping the same number of
18 bins per machine you would have the same set up and
19 take down costs?

20 A Right, but again the number of bins in
21 aggregate that you're going to need to sweep is going
22 to depend on the network and not the volume because
23 the bins represent network destinations in the Postal
24 Service.

25 Q Well, if there's additional volume to

1 existing bins, you do have to sometimes sweep those
2 more often because of the additional volume, do you
3 not?

4 A But that's sweeping in the course of the
5 scheme, not the set up and take down. That's part of
6 the run time.

7 MR. OLSON: Okay. Thank you.

8 CHAIRMAN OMAS: Thank you, Mr. Olson.

9 Is there anyone else?

10 (No response.)

11 CHAIRMAN OMAS: There being none,
12 Mr. Bozzo, that completes your testimony here today.
13 We appreciate your appearance and your contribution to
14 our record and you are now excused.

15 THE WITNESS: Thank you, Mr. Chairman.

16 (The witness was excused.)

17 CHAIRMAN OMAS: This concludes today's
18 hearing. We will reconvene tomorrow morning at 9:30,
19 when we will receive testimony from witnesses Bell,
20 Thress, McCormack, Gorman, Kent, Taufique, Loetscher
21 and Berkley.

22 Thank you very much and have a good evening.

23 (Whereupon, at 1:25 p.m., the hearing was
24 adjourned, to be reconvened the following day,
25 Wednesday, December 6, 2006, at 9:30 a.m.)

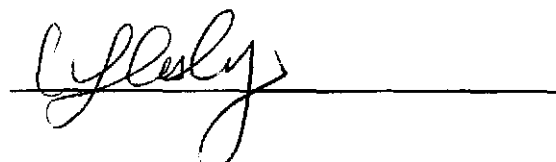
12531

REPORTER'S CERTIFICATE

DOCKET NO.: R2006-1
CASE TITLE: Postal Rate and Fee Charges, 2006
HEARING DATE: 12/5/06
LOCATION: Washington, D.C.

I hereby certify that the proceedings and evidence are contained fully and accurately on the tapes and notes reported by me at the hearing in the above case before the Postal Rate Commission.

Date: 12/5/06



Official Reporter
Heritage Reporting Corporation
Suite 600
1220 L Street, N.W.
Washington, D.C. 20005-4018